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1895/96

428
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University of Kansas.

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Catalogue

of the

School of Pharmacy

for the

Collegiate Year 1894-'95.

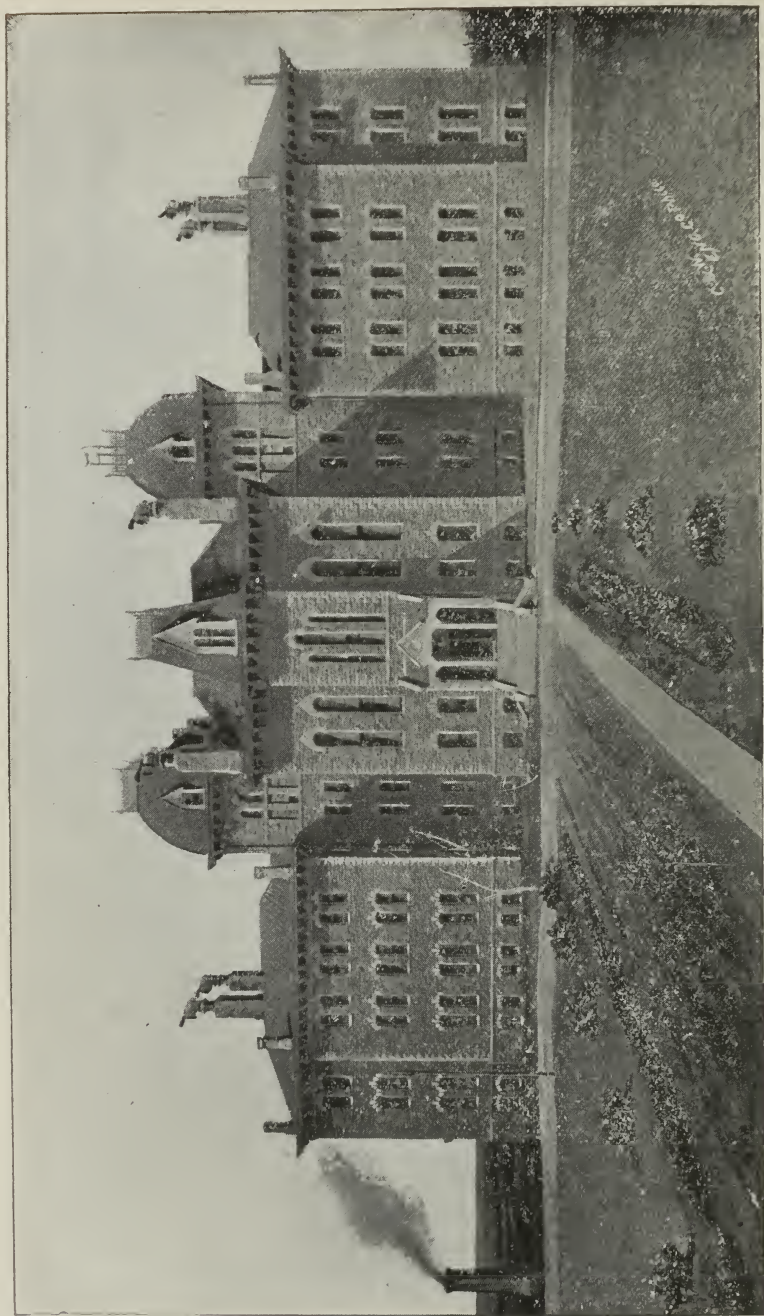
Also,

Announcements for 1895-'96.

Lawrence, Kas.
1895.



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THE UNIVERSITY OF KANSAS. (Main Building.)

University of Kansas.

Catalogue

of the

School of Pharmacy

for the

Collegiate Year 1894-'95.

Also,

Announcements for 1895-'96.

Lawrence, Kas.

• 1895.

1895.	S	M	T	W	T	F	S	1896.	S	M	T	W	T	F	S
JULY.	..	1	2	3	4	5	6	JAN.	..	..	..	1	2	3	4
	7	8	9	10	11	12	13		5	6	7	8	9	10	11
	14	15	16	17	18	19	20		12	13	14	15	16	17	18
	21	22	23	24	25	26	27		19	20	21	22	23	24	25
	28	29	30	31	..	..	..		26	27	28	29	30	31	..
AUG.	..	..	..	..	1	2	3	FEB.	..	..	..	..	..	..	1
	4	5	6	7	8	9	10		2	3	4	5	6	7	8
	11	12	13	14	15	16	17		9	10	11	12	13	14	15
	18	19	20	21	22	23	24		16	17	18	19	20	21	22
	25	26	27	28	29	30	31		23	24	25	26	27	28	29
SEPT.	1	2	3	4	5	6	7	MAR.	1	2	3	4	5	6	7
	8	9	10	11	12	13	14		8	9	10	11	12	13	14
	15	16	17	18	19	20	21		15	16	17	18	19	20	21
	22	23	24	25	26	27	28		22	23	24	25	26	27	28
	29	30	..	..	..	..	..		29	30	31	..	..	..	..
OCT.	..	..	1	2	3	4	5	APR.	..	..	..	1	2	3	4
	6	7	8	9	10	11	12		5	6	7	8	9	10	11
	13	14	15	16	17	18	19		12	13	14	15	16	17	18
	20	21	22	23	24	25	26		19	20	21	22	23	24	25
	27	28	29	30	31	..	..		26	27	28	29	30	..	..
NOV.	..	..	..	..	..	1	2	MAY	..	..	..	..	..	1	2
	3	4	5	6	7	8	9		3	4	5	6	7	8	9
	10	11	12	13	14	15	16		10	11	12	13	14	15	16
	17	18	19	20	21	22	23		17	18	19	20	21	22	23
	24	25	26	27	28	29	30		24	25	26	27	28	29	30
	..	..	..	..	..	..	..		31	..	..	..	..	..	..
DEC.	1	2	3	4	5	6	7	JUNE	..	1	2	3	4	5	6
	8	9	10	11	12	13	14		7	8	9	10	11	12	13
	15	16	17	18	19	20	21		14	15	16	17	18	19	20
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1894/95-1895/96

Announcements

For 1895-'96.

SEPTEMBER 11, <i>Wednesday</i>	First term begins.
11, <i>Wednesday</i> }	{ Examination of candidates for admission, and presentation of certificates from high schools, academies, and other institutions.
12, <i>Thursday</i> }	
13, <i>Friday</i>	{ General assembly of students, and annual address in University Hall, at 10 A. M.
NOVEMBER 14, <i>Thursday</i>	Second half term begins.
28, <i>Thursday</i> }	{ Thanksgiving recess.
29, <i>Friday</i>	
DECEMBER 2, <i>Monday</i>	{ Christmas concert by Department of Music.
17, <i>Tuesday</i> , 8 p. m.,	
(Christmas recess, Saturday, Dec. 21, to Monday, Jan. 6, incl.)	
JANUARY.. 6, <i>Monday</i>	Christmas recess ends.
27, <i>Monday</i>	{ Semiannual examinations.
TO 31, <i>Friday</i> , (incl.) }	
FEBRUARY. 3, <i>Monday</i>	Second term begins.
APRIL..... 1, <i>Wednesday</i>	First half term ends.
2, <i>Thursday</i> }	{ Spring recess.
3, <i>Friday</i> }	
6, <i>Monday</i>	
7, <i>Tuesday</i>	Second half term begins.
JUNE..... 1, <i>Monday</i>	Annual examinations.
TO 5, <i>Friday</i> , (incl.) }	{ Commencement concert by Department of Music.
4, <i>Thursday</i>	
5, <i>Friday</i>	{ Commencement recital, Department of Elocution and Oratory.
6, <i>Saturday</i> }	{ Annual exhibit of Painting Department.
TO 10, <i>Wednesday</i> ...	
7, <i>Sunday</i> , 8 p. m.,	Baccalaureate sermon.
10, <i>Wednesday</i> , }	{ Commencement exercises, School of Arts.
10 a. m. }	

Organization and Government.

By act of the legislature at the session of 1885, it was provided as follows:

That the Board of Regents of the State University be directed to establish, without delay, a chair of pharmacy in said institution.

It was further enacted at the same session of the legislature that—

The Board of Regents of the State University shall appoint five registered pharmacists, who shall hold office for the term of four years, to conduct the examination of all graduates in pharmacy, and sign the certificates of graduation.

In accordance with this action of the legislature, the Board of Regents, at its meeting in June, 1885, elected Lucius E. Sayre, Ph. G., of Philadelphia, a practical pharmacist, and an experienced instructor, late professor of pharmacy in the Woman's Medical College, and instructor in materia medica in the Philadelphia College of Pharmacy, and author of "Organic Materia Medica and Pharmacal Botany," as Professor of Pharmacy, and ordered the organization of the department at the beginning of the fall term, September 9, 1885. At a subsequent meeting, the Board of Examiners in Pharmacy was appointed.

Further provision was made for the University by the legislature of the state in an act approved February 25, 1889, and entitled "An act to provide for the government and maintenance of the University of Kansas." This act, repealing all former legislation bearing upon the same topics, continues the name of THE UNIVERSITY OF KANSAS, and its location at LAWRENCE, in DOUGLAS COUNTY. It further enacts—

That the University shall provide the means of acquiring a general and thorough knowledge in literature, the sciences, and the arts; and also provide students who desire to pursue special studies with the most approved appliances, authorities and instruction to insure the greatest knowledge and research in any special branch or learning connected with university education; that it shall consist of three departments: I. A department of the literatures; II. A department of the sciences; III. A department of the arts; and that within these three departments there shall be established such schools as the Regents, in connection with the Faculty, may order. The same law further enacts that the government of the University shall be vested in a board of seven Regents, six of whom shall be appointed by the governor and confirmed by the senate, and whose term of

office shall be four years; that the Board of Regents shall be a body corporate, under the name of "The Regents of the University of Kansas," and as such may sue and be sued, make contracts, and hold and transfer property, both real and personal, for the University.

The Board of Regents is also invested with the power to elect a Chancellor, who shall be the chief officer of the University; to appoint professors, assistants, tutors; to increase and diminish their number as the interest of the University may require; to employ a janitor, librarian, and such other officers and employes as in their judgment the needs of the University require.

The Board is also empowered to confer such degrees and grant such diplomas as are usually conferred and granted by other institutions of learning.

Board of Regents.

F. H. SNOW, LL. D.,

PRESIDENT.

HON. J. P. SAMS.....	Seneca	Term expires 1897
HON. C. F. SCOTT.....	Iola	" " 1899
HON. H. S. CLARKE.....	Lawrence.....	" " 1897
HON. J. W. FORNEY.....	Belle Blaine	" " 1899
HON. FRANK G. CROWELL	Atchison.....	" " 1899
HON. O. L. MOORE.....	Abilene	" " 1897

Officers of the Board.

F. H. SNOW.....	President.
H. S. CLARKE.....	Vice President.
C. F. SCOTT	Secretary.

Officers of the University.

F. H. SNOW.....	Chancellor.
R. K. MOODY.....	Secretary, Treasurer, and Purchasing Agent.
E. F. ENGEL.....	Registrar.
C. H. GOODRICH.....	General Agent for University Lands.
T. C. WHITE.....	Superintendent of Buildings and Grounds.

Committees of the Board.

F. H. SNOW, *ex officio* Chairman of all Committees.

Instruction:

C. F. SCOTT.
J. W. FORNEY.
J. P. SAMS.

Library and Apparatus:

O. L. MOORE.
C. F. SCOTT.
H. S. CLARKE.

Finance:

J. P. SAMS.
J. W. FORNEY.
F. G. CROWELL.

Buildings, Grounds, and Supplies:

H. S. CLARKE.
O. L. MOORE.
F. G. CROWELL.

University Land and Endowments:

O. L. MOORE.
J. P. SAMS.
J. W. FORNEY.

Reports and Publications:

C. F. SCOTT.
J. W. FORNEY.
F. G. CROWELL.

Auditing of Accounts.

F. G. CROWELL.
J. P. SAMS.
H. S. CLARKE.

The Faculty.

FRANCIS HUNTINGTON SNOW, PH. D., LL. D., PRESIDENT,
Botany.

LUCIUS ELMER SAYRE, PH. G., DEAN,
Pharmacy and Materia Medica.

Latin.

EDGAR HENRY SUMMERFIELD BAILEY, PH. D.,
Chemistry and Toxicology.

LUCIEN IRA BLAKE, PH. D.,
Physics.

SAMUEL WENDELL WILLISTON, M. D., PH. D.,
Anatomy and Physiology.

ERASMUS HAWORTH, M. S., PH. D.,
Crystallography.

WILLIAM CHASE STEVENS, B. S.,
Associate Professor of Botany.

EDWARD CURTIS FRANKLIN, M. S., PH. D.,
Associate Professor of Chemistry.

HANNAH OLIVER, A. M.,
Assistant in Latin.

SAMUEL ROBERT BOYCE, PH. C.,
Assistant in Pharmacy.

A. ST. C. DUNSTAN, C. E.,
Assistant in Physics.

M. A. BARBER, A. M.,
Assistant in Botany.

MARTIN EVERETT RICE, M. S.,
Assistant in Physics.

* Vacancy occasioned by the death of D. H. Robinson, July 21, 1895, not yet filled.

School of Pharmacy.

TERMS OF ADMISSION.

The candidate must pass an entrance examination in the following studies:

1. Arithmetic, including the metric system.
2. History of the United States.
3. Geography, descriptive and physical.
4. English Grammar and Composition.
5. Civil Government. Fiske, Macy, Townsend, or Peterman.
6. Physics (after 1895-'96). Gage.

Admission by Certificate.—By authority of the Board of Regents, the Faculty will admit students into the School of Pharmacy upon the certificate of any president, superintendent or principal of any college, academy, or other incorporated institution of learning, or of any high school, showing that such students have completed all the above-named preparatory studies.

In all cases, if the first term's work in the University develop the fact that the student's preparation has been imperfect, the right of the professor in charge is reserved to require further and satisfactory examination.

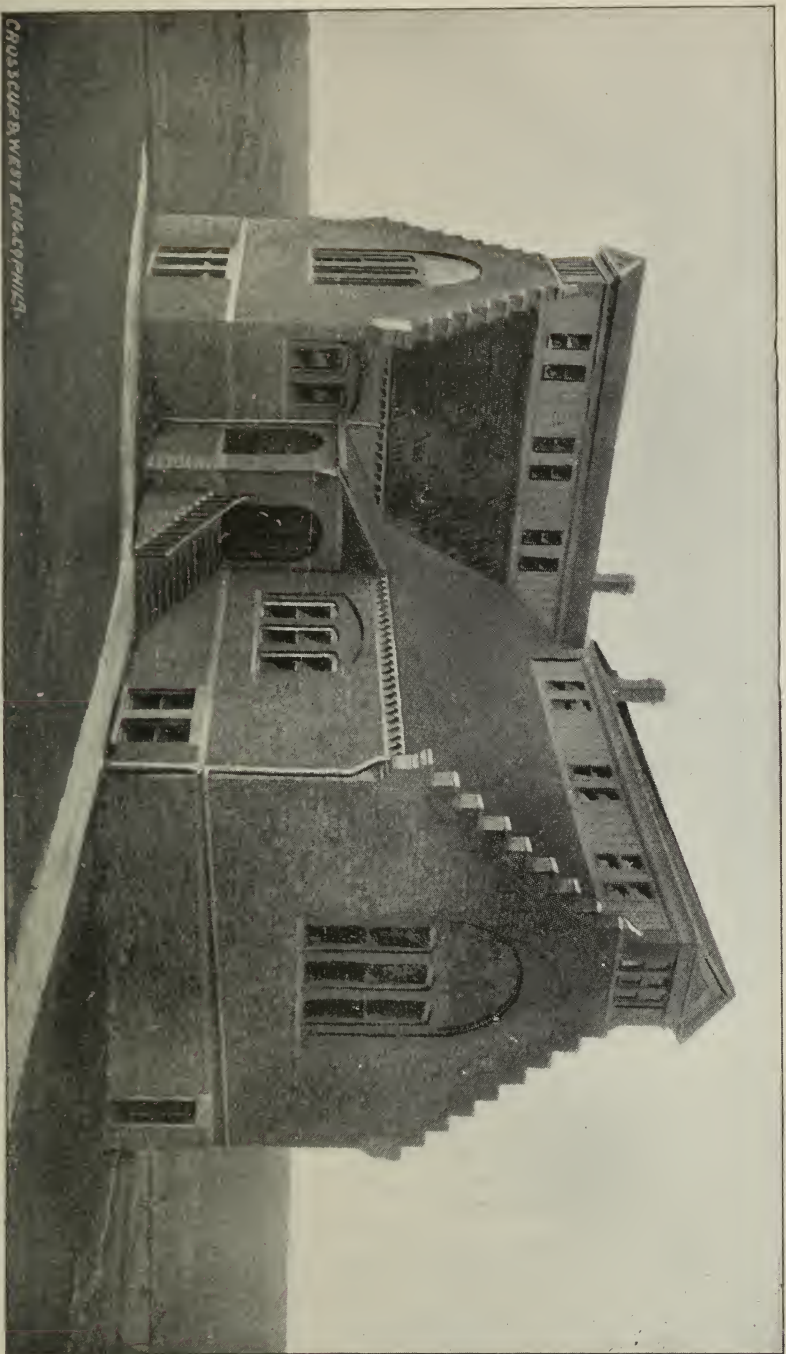
THE EDUCATIONAL SCOPE OF THE SCHOOL.

The graduate of this department is assured a thorough qualification for the most responsible positions in pharmacy, and given a well-grounded preparation for service as a manufacturing chemist or as an analyst. First and foremost, the School insists that the training shall be thorough and practical. Its course, requiring, as it does, a steady discipline of the intellectual and executive powers, offers decided advantages over those courses in pharmacy where the student's immediate contact with the circle of instruction is but occasional.

LENGTH OF COURSE.

The course of this School is similar to that offered in other universities of best standing, notably, Ann Arbor and the University of Wisconsin. It embraces two years of nine months each.

Experience has fully demonstrated that shorter courses leave those who pursue them seriously crippled, especially for the higher departments of the profession. Short cuts here, as elsewhere, produce superficial cramming, which never proves a safe foundation for future advancement. This is shown to be true by the demand of progressive educators for higher standards and longer courses.



CROSSCUT WEST ENCLOSURE

CHEMISTRY AND PHARMACY BUILDING.

SPECIAL STUDENTS.

Persons of good character who desire, for reasons satisfactory to the Faculty, to pursue some special line of study, without becoming candidates for a degree, are allowed to enter as special students. No entrance examinations are required of such special students further than may be necessary to satisfy the instructors under whom the studies may be taken.

Special students are subject to the same regulations as regular students with regard to the quality of work performed, and attendance at recitations and examinations, but not as to the number of studies to be pursued. The Faculty may at any time deprive any special student of his privileges, if it appear that he is abusing or neglecting them.

Course of Study.

JUNIOR YEAR.

First Term:

Pharmacognosy (*a*), * every day, at 9. Mr. BOYCE.

Pharmacy (*b*), * every day, at 9. Mr. BOYCE.

General Chemistry, daily, at 10. Professor FRANKLIN.

Physics, Monday, Wednesday, and Friday, at 11; laboratory, Thursday and Friday, 2 to 5. Mr. DUNSTAN.

Second Term:

Pharmacy, at 9, Monday, Wednesday, and Friday. Mr. BOYCE.

Materia Medica, at 9, Tuesday and Thursday. Mr. BOYCE.

Latin, at 10, every day. Miss OLIVER.

Botany, every day, from 10 to 12. Professor STEVENS and Mr. BARBER.

Qualitative Analysis (*a*), every day, 2 to 5. Mr. FRANKLIN.

Laboratory practice in Pharmacy (*b*), every day, 2 to 5. Mr. BOYCE.

SENIOR YEAR.

First Term:

Pharmacy (*a*), every day, at 12. Professor SAYRE.

Materia Medica (*b*), every day, at 12. Professor SAYRE.

Histological Botany (*a*), 2 to 4, every day. Professor STEVENS.

Physiology (*a*), every day, at 4. Professor WILLISTON.

Mineralogy (*b*), every day, at 4. Professor HAWORTH.

Physiological Chemistry and Urinary Analysis (*b*), 2 to 5, every day. Professor SAYRE.

Drug Assay and Pharmaceutical Testing (*a*). Professor SAYRE and Mr. BOYCE.

Pharmaceutical Quantitative Analysis, with laboratory work (*a*), 9 to 12. Professor BAILEY and Mr. WHITTEN.

Second Term:

Pharmacy, at 9, Monday, Wednesday, and Friday. Professor SAYRE.

Materia Medica, at 9, Tuesday and Thursday. Professor SAYRE.

Organic Chemistry, every day, at 12. Professor FRANKLIN.

Toxicology (*b*), at 12. Professor BAILEY.

Microscopic Examination of Drugs (*a*), 2 to 4. Professor SAYRE.

Preparation of thesis.

FOUR YEARS' COURSE IN PHARMACY.

A four years' course in pharmacy will be inaugurated in 1896, on the plan outlined as follows:

FIRST YEAR.	
<i>First Term.</i>	<i>Second Term.</i>
Chemistry.	Qualitative Analysis (<i>a</i>).
Geometry (<i>a</i>).	Botany (<i>b</i>).
Algebra (<i>b</i>).	Scientific German.
English.	English.
SECOND YEAR.	
Physics.	Advanced Inorganic Chemistry.
Quantitative Analysis.	Physics.
Scientific French.	Materia Medica (<i>a</i>).
	Pharmacy (<i>b</i>).
THIRD YEAR.	
Pharmacy (<i>a</i>).	Pharmacy Laboratory.
Materia Medica (<i>b</i>).	Organic Chemistry.
Pharmaceutical Chemistry.	Structural Botany.
Mineralogy (<i>b</i>).	
Assaying (<i>a</i>).	
FOURTH YEAR.	
Bacteriology (<i>a</i>).	Therapeutics (<i>b</i>).
Organic Preparations.	Plant Analysis (<i>a</i>).
Physiological Chemistry (<i>b</i>).	Microscopic Study of Drugs (<i>a</i>).
Physiology.	Original Research (<i>b</i>).
	Thesis.

Description of the Courses.

JUNIOR YEAR—FIRST TERM.

PHARMACY.—Coblentz Pharmacy and Sayre's Essentials of Pharmacy. The work consists of lectures and recitations upon the subjects of specific gravity, the different systems of weights and measures, problems in parts by weight, alligation, and the metric system as applied to pharmacy. Particular attention is paid to the

* (*a*) Means that the study occupies the first half term; (*b*) the second half term.

study of the formulæ of the different pharmacopœial preparations, the consideration being from a theoretical standpoint, and directed toward the action of different menstrua upon drugs of various constitutions. Monday, Wednesday, and Friday. Every day (*b*), 9 to 10. Mr. BOYCE.

PHARMACOGNOSY.—Sayre's *Materia Medica* and Pharmacognosy. At this time lectures are given upon the crude drugs and chemicals of the pharmacopœia. The student is given the official title, common name, German name, medicinal and physical properties, dose, and, in case of organic drugs, also the origin and habitat. To illustrate graphically the distribution and source of the crude drugs, maps and plans convenient for ready reference, which impress upon the minds of the students the points made in the lectures, and which enable them to become familiar with the appearance and characteristics of the drugs, are placed in their hands. This list embraces about 300 drugs, and, in addition, access may be had to large collections of rare and less-important medicinal substances. Every day (*a*), 9 to 10. Mr. BOYCE.

CHEMISTRY.—Remsen's Chemistry. During the first half term of the Junior year, instruction is given in theoretical and elementary chemistry. The student has the opportunity of becoming familiar with the nomenclature of the science, with the simpler chemical formulæ and reactions, and the methods used for solving chemical problems. At the same time the more important elements are discussed, and the characteristic salts, especially those of pharmaceutical importance, are studied. By a combination of the lecture and quiz systems, the modern theories are taught, and a more intimate knowledge of the elements and their compounds, with properties and uses of each, is obtained. Every day, 10 to 11. Laboratory practice is required of all students. Professor FRANKLIN.

PHYSICS.—Carhart & Schute; Laboratory Manual, Schute. The class-room work for the term consists of lectures and recitations on the general subject of physics, with experimental demonstrations; and upon special topics bearing more or less upon practical pharmacy, such as the theory and use of the microscope and the analytical balance, specific gravity, thermometry, calorimetry, saccharimetry, spectrum analysis, the metric system, and the care and handling of batteries.

The aim of the laboratory work is to train the student in such physical manipulation as is of direct importance in pharmaceutical work. Class room Monday, Wednesday, and Friday, 11 to 12; and laboratory work Thursday and Friday, 2 to 5. Mr. DUNSTAN.

JUNIOR YEAR—SECOND TERM.

PHARMACY.—Patch's Laboratory Manual. Lectures, recitations, and laboratory practice. The instruction is a continuation of the work of the first term, especial prominence being given to practical

application of the theories taught in the preceding lectures. Practice is given in the analysis of alcoholic liquors, estimation of acids and alkalies by specific gravity, and comparison with the tables of percentage and specific gravity of the pharmacopœia. The preparation of the official volumetric solutions, and their application to the estimation of iron, salts, and other chemical compounds, is taught. This is followed by the manufacture of the scale salts of iron, syrups, and mucilages, the distillation of ethers, the preparation of galenicals, and the estimation of solubilities. Actual prescription work in the making of pills, suppositories, ointments, troches, etc., closes the practice in the pharmaceutical laboratory for the year. Lectures Monday, Wednesday, and Friday, 9 to 10; laboratory every day (*b*), 2 to 5. Mr. BOYCE.

QUALITATIVE ANALYSIS.—During the first half of the second term, the student will devote at least 12 hours per week to the study of qualitative analysis. He is furnished with the necessary apparatus and chemicals, and follows a systematic course of work in the laboratory. Lectures are given at intervals upon this work. At the close of the course, the examination, which is a practical one, is so conducted that the student must demonstrate his ability to analyze an unknown mixture. Every day (*a*), 2 to 5. Professor FRANKLIN.

LATIN.—Latin Grammar of Pharmacy and Medicine, D. H. Robinson. This important and much-abused subject receives careful and thorough attention. Professor Robinson has written a book embracing the material necessary for a pharmacist's education, without the introduction of any superfluous matter. The manner of presentation is such that the interest is awakened, and the usually dull subject is made thoroughly interesting. Every day, 10 to 11. Miss OLIVER.

MATERIA MEDICA.—Sayre's *Materia Medica and Pharmacognosy*. The first half term completes the work of the preceding term, and is followed by the study of the physical properties of the more prominent official drugs. The second half is devoted to a series of lectures and recitations upon the classification of medicinal substances from a botanical and physical standpoint. The lectures are illustrated by lantern slides and an excellent collection of photographs, as well as by herbarium specimens. Tuesday and Thursday, 9 to 10. Professor SAYRE and Mr. BOYCE.

STRUCTURAL BOTANY.—Twenty weeks are devoted to study in the laboratory, of the general morphology of plants. Lectures are given once a week on the work already done in the laboratory. Carefully prepared drawings and descriptions are required of each student. Field excursions are made each Saturday. Every day, 10 to 12. Professor STEVENS and Mr. BARBER.

SENIOR YEAR—FIRST TERM.

PHARMACY.—Remington's Practice and Sayre's Essentials. A review of the important features of the Junior course is given at the beginning of the year, followed by lectures devoted more particularly to pharmaceutical chemistry. The subsequent lectures embrace a more careful study of the organic substances used in medicine, their constituents, chemical and physical characteristics, and application in the preparations of the United States Pharmacopœia. Each drug is considered individually, but drugs and their preparations are so grouped as to make prominent a study of the proximate principles. For instance, those containing gums and mucilage will be associated on the one hand, and those containing proximate principles on the other. Subsequently, the organic substances obtained from the animal kingdom are considered.

In the second half of this term, laboratory work in drug assay, detection and quantitative estimation of adulterations and impurities, and standardization of pharmaceutical preparations, occupies every afternoon of the week. Every day (*a*), 10 to 12. Professor SAYRE.

CRYSTALLOGRAPHY AND MINERALOGY.—Crystallography and mineralogy are taught during the second half of the first term in the Senior year. A few weeks are devoted to crystallography, after which the different minerals are studied, the most common ones being studied in considerable detail. Instruction is given by lectures and laboratory work. The former gives general outlines of the subjects studied; the latter includes a study of crystal models and natural crystals, blowpipe exercises, and determinative mineralogy, for which both the chemical and physical properties of the minerals are regarded. Every day (*b*), Professor HAWORTH.

MATERIA MEDICA.—Maisch's Materia Medica and Sayre's Materia Medica and Pharmacognosy. Special stress is laid upon chemical constitution, physical characteristics and structure of the various official, and of the more prominent unofficial drugs. Materia medica is every day (*b*), 12 to 1. Professor SAYRE.

OUTLINING IN DRAWING.—Since it is especially desirable that students be well prepared for the drawing in botany and materia medica, arrangements have been made with the professor of drawing and painting, A. H. Clark, for a short course suitable for the needs of Pharmacy students.

HISTOLOGICAL BOTANY.—Each student is provided with a compound microscope and reagents necessary for the work. Every day (*a*), 2 to 4. Professor STEVENS.

PHYSIOLOGY.—Martin's Human Body. Daily lectures, with collateral reading and frequent examinations, supplemented by diagrams, lantern, and other illustrative apparatus. Every day (*a*), 4 to 5. Professor WILLISTON.

PHARMACEUTICAL QUANTITATIVE ANALYSIS.—In the Senior year, the first half term is devoted to the study of pharmaceutical quantitative analysis, with special reference to the needs of the practical pharmacist. The aim is to secure accuracy in the results and careful habits in manipulation, rather than to have the student perform a large number of analyses. Every day (*a*), 9 to 12. Professor BAILEY and Mr. WHITTEN.

The following analyses, or their equivalents, will be executed:

<i>Analysis of—</i>	GRAVIOMETRIC.	<i>For the determination of—</i>
1. Potassium carbonate.....		Water.
2. Ammonium-ferrous sulphate.....		FeO
3. Barium chloride.....		Ba, Cl, H ₂ O.
4. Hydro-di-sodic phosphate.....		P ₂ O ₅ .
5. Potassium bichromate.....		Cr ₂ O ₃ .
6. Calcite (CaCO ₃)		CaO.

VOLUMETRIC.

7. Acidimetry.
8. Alkalimetry.
9. Determination of iron.
10. Determination of chlorine.
11. Determination of free iodine.
12. Determination of copper.

DRUG ASSAY AND PHARMACEUTICAL TESTING.—Laboratory work. A special course is outlined by Professor Sayre. A scheme for the analysis is placed in the hands of the student and description of methods of analysis is supplemented by dictation. Every day (*a*), 2 to 5. Professor SAYRE and Mr. BOYCE.

SENIOR YEAR—SECOND TERM.

PHARMACY.—Remington's Practice and Sayre's Essentials. The lectures in this course embrace a more careful study of the organic substances used in medicine, their constituents, their chemical and physical characteristics, and of the application of these in the preparations of the United States Pharmacopœia. While the drugs and preparations of the United States Pharmacopœia claim principal place as the more important, due attention is paid to nonofficial ones, and in both cases great care is given to the detection of impurities by the official and other methods of testing. Monday, Wednesday, and Friday, 9 to 10. Professor SAYRE.

MATERIA MEDICA AND THERAPEUTICS.—Potter's Materia Medica and Therapeutics. During this term the physiological action and therapeutical application of drugs are considered, and special lectures are given occasionally by local physicians, and the students receive all the advantages given to preparatory medical students. Tuesday and Thursday, 9 to 10. Professor SAYRE.

ORGANIC CHEMISTRY.—Remsen's Organic Chemistry. Lectures and laboratory work. Every day, at 12. Professor FRANKLIN.

PHYSIOLOGICAL CHEMISTRY AND URINARY ANALYSIS.—Novy's Laboratory Manual. Laboratory work and recitations, supplementing the work in materia medica and therapeutics. In the laboratory, chemical examination of the fluids and secretions of the body is made, and the digestive ferments are extracted, purified, and studied. The organic salts occurring in the body are also prepared.

The subject of urinary analysis is taught by lectures and recitations, together with laboratory practice in the physiological and microscopical laboratories. Urine is studied in its normal condition and its constituents estimated. Samples of pathological urine are secured through physicians and examined for abnormal constituents. Every day (*b*), 2 to 5. Professor SAYRE.

TOXICOLOGY.—Instruction given by lectures and laboratory work. The instruction in the class room is demonstrated in the laboratory by experiments upon the lower animals and upon organic tissues. A large collection of the best works on this subject is placed at the student's disposal for reference. Every day (*b*), 12 to 1. Professor BAILEY.

MICROSCOPICAL EXAMINATION OF DRUGS.—This consists mostly in preparing and mounting sections of organic drugs, and studying the characteristics of the same. With this laboratory practice, drawings are required which shall bring out the structure of the peculiar representative tissues in each case. Every day (*a*), 2 to 4. Professor SAYRE.

THESIS.—This work embodies the results of research by the student in the laboratory and library. The subject is to be selected before the end of the first half of this term; an outline of the proposed investigation is to be presented, with references to the literature, at the beginning of the second half term; and the completed report or thesis is to be ready before the end of the term. For many subjects, the literary research may be made as valuable as the experimental investigation. Preparatory to this work, students are required to read papers before the Pharmaceutical Society, or present them to the Dean to be read.

Optional Studies.

The studies named below may be taken by any graduate of this School, or by others who are prepared for the work. They are advanced studies in the several departments, and the work is done with the regular advanced classes.

OFFERED BY DEPARTMENT OF PHARMACY.

1. Manufacture of artificial fruit essences and other compound ethers.
2. Drug assaying; standardization of crude drugs, and their preparation; and the valuation of chemicals.
3. Plant analysis; a systematic course from a chemical standpoint.
4. Analysis of foods; advanced work in physiological chemistry, estimation of the value of such articles as butter, lard, coffee, flour, etc., and the determination of adulterations.
5. Analysis of nostrums; determination of composition of articles with secret formulæ.
6. Original research; special investigation, requiring the service of more than one department in the University, can be arranged for by submitting the plan of the work to the Pharmacy Faculty.

OFFERED BY DEPARTMENT OF CHEMISTRY.

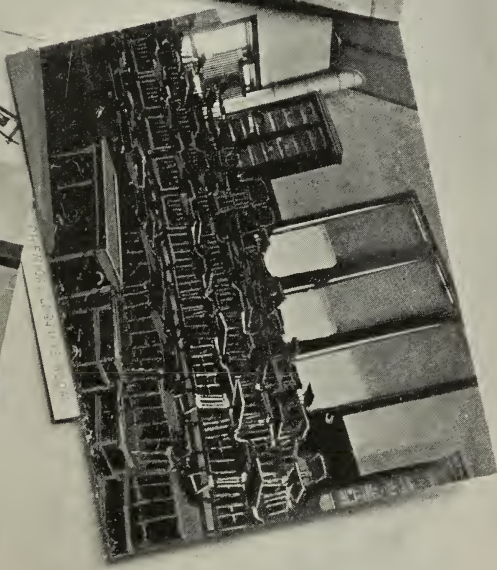
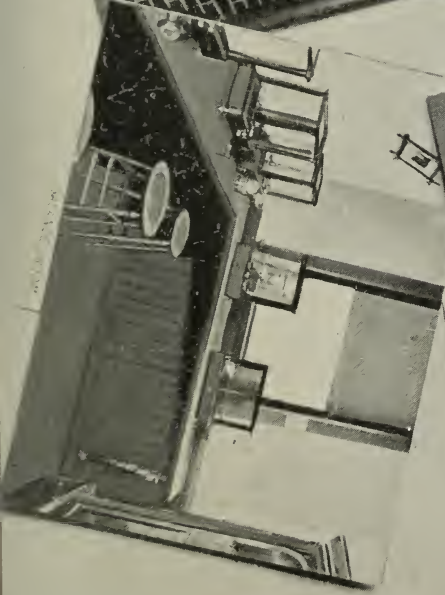
1. Organic preparations. .
2. Advanced quantitative analysis, including water analysis, mineral-water analysis, and sugar analysis.
3. Blowpipe analysis, and mineralogy. .
4. Assaying of ores—gold, silver, etc.

OFFERED BY DEPARTMENT OF BOTANY AND ENTOMOLOGY.

1. Cryptogamic botany; advanced work in structural botany; lectures and laboratory work.
2. Physiological botany.
3. Histological botany.
4. Bacteriology; lectures and laboratory work.'

OFFERED BY DEPARTMENT OF PHYSICS.

1. Electricity and magnetism; heat and light; lectures and experimental demonstration. Laboratory work four hours a week.



University Extension.

The following courses of lectures is offered in University Extension.

MEDICAL CHEMISTRY AND SANITARY SCIENCE.

BY L. E. SAYRE, PH. G.

1. INORGANIC SUBSTANCES USED IN MEDICINE. Introduction to the course. Relation of chemistry and sanitary science. Classification of inorganic substances from a chemical and medical standpoint. Physiological and therapeutic actions. Inorganic acids and metalloids.

2. INORGANIC SUBSTANCES (continued). Alkalies, alkaline earths, and metals; their combinations, and physiological and therapeutic actions.

3. ORGANIC SUBSTANCES. Remedial agents from the vegetable and animal kingdoms. Methods of extraction and isolation of active organic substances. How they should be regarded.

4. ORGANIC SUBSTANCES (continued). Classification from a botanical standpoint. The relation of this classification to therapeutic action.

5. ACTIVE AND POISONOUS PRINCIPLES. Methods of obtaining. Chemical and physical properties. History and properties of the alkaloids.

6. PROMINENT COMBINATION OF INORGANIC SUBSTANCES AS REMEDIAL AGENTS. By chemical combination and decomposition. Mechanical mixtures.

7. REMEDIAL COMBINATIONS FROM THE VEGETABLE KINGDOM. Extracts, tinctures, infusions, etc.

8. ALCOHOL AND ITS DERIVATIVES. Ether, chloroform, chloral, iodoform, etc.

9. ANTISEPTICS AND DISINFECTANTS. Definition of terms. Proper use of. Sanitation.

10. CARBOLIC ACID AND OTHER COAL-TAR PRODUCTS. Manufacture. Chemical and physical properties. Physiological action. Relation of chemical to therapeutic properties.

11. DIGESTIVE FERMENTS AND DIETETICS. Foods. Principles from the fluids of the body important in the digestive process. The relation of foods to these principles.

12. GENERAL SUMMARY. Relation of remedial agents to sanitary science. The pharmacopœia. The dispensaries.

(For particulars, correspond with Chancellor F. H. Snow.)

Miscellaneous Information.

LABORATORY FACILITIES.

The student in this School has access to six distinct and well-arranged laboratories. These are: The pharmaceutical laboratory, the two chemical laboratories (for qualitative and quantitative analysis), microscopical laboratory, physical laboratory, and bacteriological laboratory. If the student desires, and has the time, he has the privilege of other laboratories, not mentioned, for other lines of study; for example, assaying, mineralogy, etc. He also has access to the collections of the departments of natural history, chemistry, mineralogy, and pharmacy. He has the advantage of an extensive library, such as is not found ordinarily, and such as can be furnished only by universities having extensive facilities.

DRUG-STORE EXPERIENCE

Is essential to success in the pursuit of pharmacy, and cognizance of this fact is taken in the requirements for graduation. While the training obtained in the drug store can be acquired nowhere else, it is impracticable to carry on such work while the student is attending college. The custom of occupation while attending lectures is not only detrimental to mental culture, but is physically overtaxing. No student can safely undertake any more of such work than is required in our laboratories, as there is danger of limiting too much the time for study, and of preventing the student from giving a faithful and prompt attention to the instruction of the class room and the laboratory.

The opinion is held by some that the actual experience gained in the drug store is a sufficient compensation for the consequent deficiencies in college work, the unwarranted assumption being that the student receives plenty of practice and manual training by such an arrangement.

The conclusion that drug-store experience and the work of the pharmaceutical laboratory of the School are similar, and that one can be substituted for the other, is an unwarranted one, for the following reasons: In the former, the attention in the way of special instruction is necessarily limited to the leisure of the one in charge, whose superintendence is also demanded in other directions; while in the latter, the sole aim is to impart instruction, and nothing but the work of instruction presses on those in charge. The scope of

the former is limited to the peculiar situation and circumstances of that one store, and it can, therefore, at best, give only a limited range of manual training; while the aim of the latter is to familiarize the student with all operations met with in any store, so that his training is not circumscribed by narrow limits.

Students in pharmacy will recite with collegiate classes in botany, physics, chemistry, and in other subjects that are common to the various departments of the University.

They are granted the privileges of the University library, and of the various collections in zoology, botany, and chemistry, and all advantages possessed by other students of the institution.

REQUIREMENTS FOR GRADUATION.

The degree of Ph. C. (Pharmaceutical Chemist) will be conferred upon such students as complete the above course and pass satisfactory examination in the same. Heretofore the University has made itself responsible for shop experience, requiring for the degree conferred by the institution, a specified amount of actual practice in the laboratory, and at the prescription and dispensing counter of the drug store. Hereafter the responsibility of vouching for such experience will be delegated to the State Board of Pharmacy. The state law requires four years of practice, but each year spent at the University counts as one year of such requirement.

GRADUATE COURSE IN PHARMACY.

A graduate course, including more advanced work in botany, materia medica, pharmacy, mineralogy, organic chemistry, and the various branches of organic analysis, is offered to any who can avail themselves of it. The main object of this course is to lead to original investigation. (See "Optional Studies.")

EXAMINATIONS.

Examinations will be held at the end of each term upon the work of that term. These term examinations are held by the Faculty, and are generally written. At the end of the course, examinations will be held by the Faculty, in connection with the State Board of Examiners in Pharmacy, in such manner as may hereafter be prescribed.

REGISTRATION, RECORD, ETC.

The candidate for admission to the School of Pharmacy should present himself to the Registrar for examination or registration of grades from high school on the dates indicated under "Announcements." If entitled thereto, he will receive a certificate of registration, copies of term schedule, regulations, etc. At the close of each term, each student is given a transcript of the record of his work, which is kept in the office of the Registrar.

FEES.

Tuition in the School is *free* to Kansas students. The state supports the School, and looks for no pecuniary return from the students.

Non-residents of the state are required to pay a fee of \$25 per annum. If such students complete the work of this School in less than two years (unless one year shall have been taken in some other college of pharmacy), a double fee will be required.

A graduating fee of \$5 is required of *all* students. No charge is made for the diploma.

In the several laboratories, charges are necessary to cover the actual expense for the material used and breakage of apparatus. Under the head of "Pharmacy," a fee of \$20 (\$10 of which is returnable) is required, which secures admission to pharmaceutical, physiological and microscopical laboratories.

General chemistry fee, \$12; \$4 of which, less breakage, is returnable. Qualitative analysis, \$6; \$2 of which, less breakage, is returnable.

A physical laboratory fee of \$2.

A botanical laboratory fee of \$1.

In the Senior year, the following fees are to be paid in advance by the student:

A pharmacy laboratory fee of \$20, as in the Junior year.

Quantitative analysis, \$7; \$2.50 of which, less breakage, is returnable.

A botanical laboratory fee of \$1, to cover the work in structural botany.

A mineralogical laboratory fee of \$1.50.

All fees must be paid before registration at the opening of the school year.

EXPENSES.

Day board in clubs varies, according to the economy practiced, from \$1.50 to \$2.25 per week. On this plan, a company of students appoints a steward or a committee to arrange terms with a competent housekeeper, to buy provisions as needed, to keep a list of rooms for rent in the vicinity, and to collect from the membership the estimated cost in advance for each week. These students generally furnish their own rooms, and provide lights, fuel, etc. An unfurnished room rents for about \$2 per month.

Price of board cannot be stated in advance, as much depends upon the demands of the student. Table board ranges from \$2 to \$3.50 per week.

The total expense incurred by students, including clothing, may be seen by reference to the table of statistics appended, which was prepared under the direction of Mr. Adams, associate in history and sociology, who has collected some information in regard to college expenses. This was done by means of circulars sent to students asking for items of expense for the last collegiate year of nine

months. Thus, the Sophomore class returned answers for the Freshman year, and so on. It was found impossible to secure a sufficient number of returns from those who had graduated to make any just average of expenses of the Senior year; hence, no expenses are given for that year. Of the other classes, answers from students having homes in Lawrence were cut out, because a part of their expenses were not given, *c. g.*, board. Of the remaining students, two-thirds or more of each class sent in expense lists. The items given below are averages computed from those lists. The expenses are for the college year of nine months. They show the expenses of the men of the University, and not of the women.

AVERAGE YEARLY EXPENSE FOR STUDENTS.

AVERAGES FOR	Books and stationery.	Clothing.	Room rent.	Board.	Fuel and light.	Washing.	Sundries.	Total.
FRESHMAN YEAR.....	\$18 92	\$43 68	\$32 30	\$93 76	\$6 36	\$11 06	\$68 83	\$274 91
SOPHOMORE YEAR.....	17 83	62 13	41 58	100 50	5 26	11 52	70 34	309 16
JUNIOR YEAR.....	22 86	55 00	43 03	115 00	7 25	16 49	75 41	335 04
JUNIOR YEAR, LAW COURSE...	33 49	36 46	28 03	96 08	7 57	12 79	46 37	260 79
Average for <i>all</i> students, in- cluding Junior Law Course,	23 28	49 32	36 24	101 34	6 61	12 97	65 24	294 98

These items represent the average. Individual expense accounts showed a wide difference in cost for the year. The highest and lowest returns of total expense made were: Freshmen, highest \$533.25, lowest \$139; Sophomores, highest \$523, lowest \$154.28; Junior, highest \$459, lowest \$190.

First Year Medical Course.

In order to accommodate students of the University who desire to prepare for the profession of medicine, a course of study has been arranged closely related to the departments of pharmacy, chemistry, and natural history, and including materia medica, human physiology, and comparative anatomy (with dissections).

REQUIREMENTS FOR ADMISSION.

Students will be admitted to the first year medical course who are ready for admission to the Freshman class of the School of Arts in all English studies.

COURSE OF STUDIES.

First Term:

General Chemistry.—Daily, 10 to 11. Professor FRANKLIN.

Physiology (*a*).—Daily, 2 to 4. Lectures. Professor WILLISTON.

Pharmacy and Pharmacognosy.—Daily, 9 to 10. Mr. BOYCE.

Human Osteology and Vertebrate Anatomy.—Lectures and laboratory work. Daily, 2 to 4. Professor DYCHE.

Second Term:

Physiological Chemistry and Urinary Analysis.—Daily (*a*), 2 to 5. Professor SAYRE.

Botany.—Every day at 11. Professor STEPHENS.

Materia Medica.—Monday, Wednesday, and Friday, 9 to 10. Professor SAYRE.

Toxicology (*b*).—Daily, 12 to 1. Professor BAILEY.

Histology.—Daily, 10 to 12. Lectures and laboratory work. Professor WILLISTON.

During the Junior and Senior years, the student in the School of Arts may, by availing himself of the privilege in the selection of the optional courses offered him, pursue all the above courses, or their equivalents, which may be accepted by medical schools in place of the first year in their regular course in medicine.

NOTE.—No difficulty has been experienced by students who have taken this course in obtaining admission, with proper credits, to any of the larger medical colleges of the country. Among the schools which accept the above as equivalent to the first year of their courses are: Rush Medical College, Chicago; Jefferson Medical College, Philadelphia; Kansas Medical College, Topeka; University Medical College, Kansas City, Mo.; University of Wooster Medical School, Cleveland, Ohio; Kansas City Medical College, Kansas City, Mo.; St. Louis Polyclinic.

Pharmaceutical Society.

This society was organized in December, 1886, by the students and professors of the department for the purpose of mutually assisting each other in the study of the sciences especially applied to the art of pharmacy, and in the practical applications of the same, and for friendly intercourse.

It holds its meetings every alternate Friday, at 3 P. M. At this time subjects of pharmaceutical interest are presented by the members present, papers are read and discussed bearing upon subjects of current interest in pharmaceutical and chemical circles. The students of the department are expected to attend these meetings, and they are required to do work suitable for presentation to the society. See page 29. Credit will be given for all work done in connection with the society.

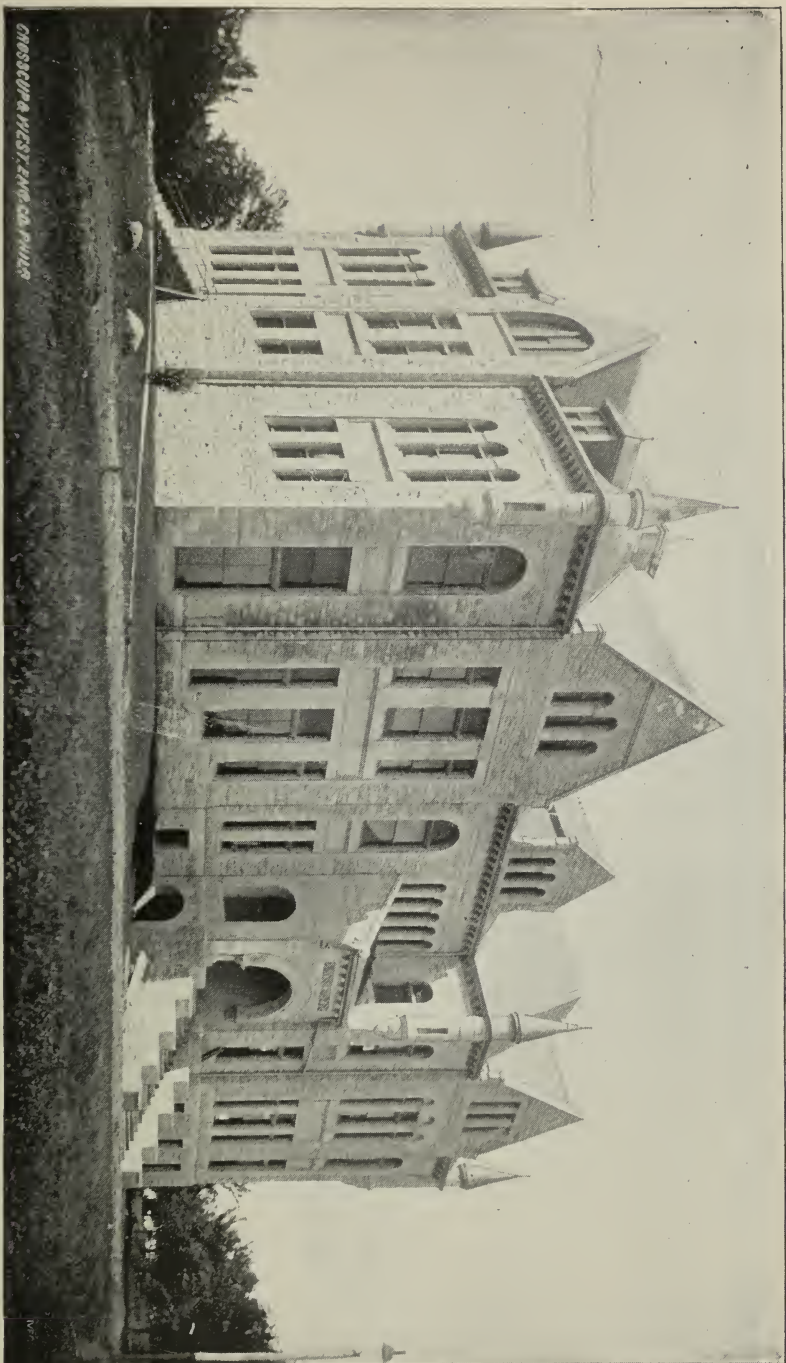
This society has been a means of stimulating to original investigations, and of bringing together the students of both Junior and Senior courses. It forms a valuable supplement to the regular course of study.

The society has a reading room, in which it has a number of pharmaceutical journals, both from this country and abroad.

As an adjunct to the society, an "annex" was established in 1890, whose objects are to secure positions for graduates and clerks for employers who are from the School. To accomplish this, a list of the alumni has been compiled, showing the present occupation of all graduates of the School, and correspondence established between the profession and the University.

JACOBS' SCHOLARSHIP.

The establishment of a scholarship under the personal direction of the Dean of the School has been made by Mr. Joseph Jacobs, Atlanta, Ga. The sum now amounts to \$100. This is intended to be loaned to young men who prove themselves worthy to receive it by their careful and earnest work while in the School. The loan shall be without interest for such a time after the student's graduation as circumstances render expedient.



CROSBY & WEST, ENG. CO. PHILA.

Donations

To the School of Pharmacy, 1895.

PERIODICALS FOR THE READING ROOM.

WEEKLIES.

Chemist and Druggist (Pharmaceutical Society), London.

Medical and Surgical Reporter, Philadelphia.

Pharmaceutical Journal and Transactions (Pharmaceutical Society), London.

SEMIMONTHLIES.

Pharmaceutical Record, New York.

MONTHLIES.

The Registered Pharmacist, Chicago, Ill.

Indiana Druggist, Indianapolis, Ind.

Medical Record, Kansas City, Mo.

Meyer Bros.' Druggist, St. Louis, Mo.

National Druggist, St. Louis, Mo.

New England Druggist, Boston, Mass.

Pharmaceutical Era, Detroit, Mich.

Pharmaceutische Rundschau, New York.

Rocky Mountain Druggist, Denver, Colo.

Western Druggist, Chicago, Ill.

Western Drug Record, Kansas City, Mo.

APPARATUS AND DRUGS.

Fritsche Bros., New York: 120 cabinet specimens of essential oils, and organic chemicals.

Books Used.

TEXT - BOOKS.

Remington's Practice of Pharmacy.
Sayre's Essentials of Pharmacy (interleaved).
Sayre's Materia Medica and Pharmacognosy.
Remsen's Chemistry.
Robinson's Latin Grammar of Pharmacy and Medicine.
Carhart and Schute's Manual.
Patch's Laboratory Manual of Pharmacy.
Maisch's Organic Materia Medica.
Gray's Manual of Botany.
Martin's Human Body.
Chemical Physiology and Urine (Long).

BOOKS OF REFERENCE.

United States Dispensatory.
National Dispensatory.
United States Pharmacopœia.
Prescott's Organic Analysis.
Halliburton's Physiology and Pathology.
Watt's Dictionary of Chemistry.
Allen's Commercial Organic Analysis.
Oldberg and Long's Laboratory Manual of Pharmaceutical Chemistry.
Bentley and Trimen, Medicinal Plants.
Pharmacographia Indica.
Fluckger's Pharmacographia.
Companion to United States Pharmacopœia (Oldberg and Wall).
Hoffman and Power's Examination of Medical Chemicals.
Attfield's Chemistry.
Home Studies in Pharmacy (Oldberg).
Inorganic Pharmaceutical and Medical Chemistry (Wulling).
Manual of Chemistry (Simon).
Pharmaceutical and Medical Chemistry (Sadtler and Trimble).
(This last-named book is especially recommended as a book for reference during college course.)

Roll of Students.

Total, 74.

Seniors.

Atterbury, Chester Wesley,	Osage City.
Bailey, Thomas,	Independence.
Bowen, William Francis,	Topeka.
Carlile, Mary Lois,	Leon.
Clarke, Albert Burnam,	Belleville.
Cowman, Edward Ernest,	Beloit.
Gehring, May Elizabeth,	Lawrence.
Hoffman, Henry Robert,	Moundridge.
Jacquemin, William Richard,	Dunavant.
Kelling, William Barnard,	Garnett.
Lang, William Henry,	Coffeyville.
Newton, William Fred.,	McCracken.
Ogg, William Frank,	Olathe.
Perry, William Tecumseh,	Belleville.
Pinkston, Fred. Allen,	Fort Scott.
Schopflin, Edward Francis,	Kansas City, Kas.
Sprague, Frank Marion,	Morrill.
Stuart, Robert Edgar,	Marysville.

Seniors, 18.

Juniors.

Bond, Florence Emma,	Salina.
Carter, Clarence Alvin,	North Topeka.
Clinger, Nelson Wesley,	Lawrence.
Crafts, John,	Alma.
Crouse, Clyde Vernon,	Waverly.
Curtis, Nora Belle,	Neosho Falls.
Dryden, John Lakin,	Buffalo.
Fisher, Dora Catherine,	Soldiers' Home.
Fuller, Herbert Morton,	Seneca.
Graham, Guy St. Clair,	Wetmore.
Gray, Spurgeon,	Lawrence.
Harbourt, Charles Ross,	Coffeyville.
Hassig, John Franklin,	Reserve.
Hatfield, Stephen Kitchen,	Sedgwick.
Herriott, Clarence,	Lawrence.
Hillhouse, David Hood,	Glasgow.
Horton, Albert Howell,	Topeka.
Igel, Richard Louis,	Leavenworth.

Kelley, Herma Tabitha,	Burlington.
Lange, William,	<i>Fairbury, Neb.</i>
Lanning, John William,	Trading Post.
Lear, James Mason,	Mound Valley.
Manson, David William,	Burlington,
Mason, Myron Robinson,	Lawrence.
Meyer, August Albert,	Alma.
McCorkle, Harry Beecher,	Independence.
McCoy, David Leroy,	Beattie.
Nagels, Leon,	St. Mary's.
Northcraft, Frank Malotte,	Abilene.
Palmer, Charles Francis,	Leon.
Roberts, William Osman,	Lawrence.
Shepherd, John Nelson,	Lawrence.
Shumate, Wilson Robert,	Frankfort.
Stewart, John Solomon,	Mulvane.
Vandruff, Anna M.,	Valley Falls.
Wherrell, Orta,	Kansas City.
Wohlfrom, Eugene Peter,	Leavenworth.
Woods, Robert Impey,	Abilene.
Woodward, Chester,	Lawrence.
Young, Clarence Floyd,	Topeka.

Juniors, 40.

Preparatory Medical.

Baine, William,	<i>Goodwill, S. D.</i>
Barton, Luella May,	Bond.
Bloss, William Scott,	Clay Center.
Cahill, Charles Joseph,	Lawrence,
Kimble, Thaddeus Carey,	Ridgeway.
Myers, Samuel Scott,	Easton.
McCorkle, Harry Beecher,	Independence.
Robinson, James Milton,	Harper.
Smith, Dollie Lee,	Tonganoxie.
Wherry, Curtis Aurelius,	Lawrence.

Preparatory medical, 10.

Specials.

Hubbard, Herman Harry,	Bavaria.
Hynes, Phillip,	Axtell.
Ingham, William Vance,	Lecompton.
Nott, William Horsman,	Syracuse.
Steinberger, Earl Ira,	Erie.
Wherry, Styles Winter,	Lawrence.

Specials, 6.

Alumni Association.

It is the earnest desire of the Faculty to keep the graduates of the School in as close relation to it as possible. To do this, it is necessary to know the residences and employments of the students. This will require the hearty co-operation of the alumni, and it is earnestly hoped that each student will feel it incumbent upon him to notify the Dean of the School upon making a change of residence or place of business. It is desired to give credit for any meritorious work done, or for degrees taken. Graduates will please notify the Dean of such events.

The question mark (?) after a name is a request for information.

The asterisk (*) indicates that the student has not yet had the practical work of two years necessary to secure the degree of Ph. G. Unless otherwise stated, all degrees are taken at the Kansas State University.

Owing to the limited time allowed for the work, the list is not nearly complete, but it is expected that by next year a complete roster can be presented.

Officers.

E. E. COWMAN.....	PRESIDENT.
M. H. SEILER, PH. G.....	FIRST VICE PRESIDENT.
W. S. DICK, PH. G.....	SECOND VICE PRESIDENT.
P. BARBER, PH. G.....	{ SECRETARY. TREASURER.
H. L. RAYMOND, PH. G.....	
S. R. BOYCE, PH. G.....	{ EXECUTIVE COMMITTEE.
L. H. BERGMAN.....	

Roll of Alumni.

Class of 1886.

- RAYMOND, HARRY LEGATE, Ph. G. Member of the firm of H. L. Raymond & Co., retail druggists, Lawrence, Kas. Member of the Kansas Pharmaceutical Association and of the American Pharmaceutical Association.
- FOX, EDWARD BAYLESS, Ph. G., A. M. (Highland University). Pharmacist, Washington, Kas. Member of the Kansas Pharmaceutical Association.
- WYLER, CARL LEWIS, Ph. G. Galveston, Texas.

Class of 1887.

- APPLEBAUGH, HARRY PERRY, Ph. G. ?
DAILY, CHARLES C., Ph. G. Drug clerk, 1103 16th street, Denver, Colo.
DICK, WILLIAM SCOTT, Ph. G. Prescription clerk in B. W. Woodward's wholesale and retail drug store, Lawrence, Kas. Member of the Kansas Pharmaceutical Association.
DEFORD, JOHN HENRY, Ph. G. Deceased.
HIGHBARGIN, CLAUDE BRITTON, Ph. G. ?
HOADLEY, CLARENCE REMSEN, Ph. G. Druggist, Burlingame, Kas.
LINDLEY, CORYDON ENDSLEY, Ph. G. Pharmacist, Lawrence, Kas.
LINDSAY, SAMUEL WATTS, Ph. G. Pharmacist, McPherson, Kas.
O'DONNELL, MARTIN, Ph. G. Prescription clerk for Swift & Holliday, Topeka, Kas. Member of the Kansas Pharmaceutical Association.
PRENTISS, FRANK, B. S., Ph. G. Pharmacist, Aspen, Colo.
SEXTON, CHARLES LOYAL, Ph. G. Drug clerk, St. Louis, Mo.
SMITH, ANDREW JACKSON, Ph. G., M. D. Leavenworth, Kas. Member of the Kansas Pharmaceutical Association.
WOOD, THOMAS HERBERT, Ph. G. Pharmacist, 501 Kansas avenue, Kansas City, Kas.
WULFEKUHLE, ALBERT FREDERICK, Ph. G. Wholesale grocery, Leavenworth, Kas.

Class of 1888.

- ABBAY, FRANK LINCOLN, Ph. G. Member of the retail drug firm of Abbey & Johnson, Newton, Kas. Member of the Kansas Pharmaceutical Association.
ALBACH, WILLIAM CLARENCE, Ph. G. Pharmacist, Falls City, Neb.
HERROLD, HERBERT M., Ph. G. Pharmacist, 232 Rialto building, Kansas City, Mo.
MCCLURE, ROBERT JAMES.* ?
MCLAREN, GEORGE. ? Atchison.
RANKIN, ERNEST R., Ph. G. ?
RICE, MARY ANTOINETTE, A. B., Ph. G. Clerk and bookkeeper for George Leis Drug Company, Lawrence, Kas. Member of the Queen Isabella Association, medical department.
ROOT, JOHN WILLIAMS, Ph. G. Assayer for Philadelphia Smelting and Refining Company, Pueblo, Colo. Member Colorado Scientific Society.
SPENCER, CHARLES BORDEN, Ph. G. Pharmacist, Kansas City, Kas.
TOPPING, ARTHUR ELLSWORTH, Ph. G. Proprietor City Drug Store, Overbrook, Kas.
WEIDA, GEORGE FRANCIS,* Carlinville, Ill. Member Berlin Chemical Society.

Class of 1889.

- HILL, BRADFORD LORING, Ph. G. ?
HILTON, WILLARD BARTHOLOW, Ph. G. Pharmacist, Cottonwood Falls, Kas.
HIMOE, ERNEST, Ph. G. ? Kansas City.
HOGEBOOM, DENTON. Pharmacist, Pittsburg, Kas.
KAISER, GEORGE FREDERICK, Ph. G. Pharmacist for S. H. Lucas, Ottawa, Kas. Member Kansas Academy of Science.
MORRIS, EDWARD WILLIAM, Ph. G. Clerk in house of D. W. Morris, Emporia, Kas.
PARKER, ROBERT, Ph. G. Deceased.
SCOTT, JOHN NESBITT, Ph. G. Dealer in surgical instruments, 413 New Ridge building, Kansas City, Mo.
SNEPP, LOREN WADE, Ph. G. ?
WEBB, ALFRED T., Ph. G. Pharmacist, Topeka, Kas.

Class of 1890.

- BOAZ, VOLNEY TATE, Ph. G. Girard, Kas.
CLASSEN, JOHN B., Ph. G. Deceased.
FIEGENBAUM, BENJAMIN F., Ph. G. Manager and junior partner in the firm of Fiegenbaum Pharmacy Company, Lincoln, Neb.
HACKETT, LEROY S., Ph. G. Humboldt, Neb.
KELLEY, SAMUEL J., Ph. G. Pharmacist, Olathe, Kas.
PHILLIPS, CARL. Lawrence, Kas.
THOMAS, ARTHUR W., Ph. G., M. D. Wakefield, Kas.

Class of 1891.

- AMOS, WILBUR STANTON, Ph. G. Member of the firm of W. E. Teare & Co., Dodge City, Kas. Member of the Kansas Pharmaceutical Association.
BROWN, WILLIAM PIERSON, Ph. G. Perry, Oklahoma. Member Kansas Pharmaceutical Association.
HEDGES FLORENCE LUELLA, Ph. G. Pharmacist and manager for Dr. T. M. Hedges, Grinnell, Iowa.
KENNERLY, JAMES WILSON, Ph. G. Drug clerk for C. D. Arnold, Topeka, Kas.
KENNEDY, JOHN H., Ph. G. Clerk for J. W. Allen & Co., Atchison, Kas.
MULLER, PETER, Ph. G. Pharmacist, Guthrie, O. T.
OATMAN, HOMER CLIFTON, Ph. G., M. D. Lawrence.
POLLOCK, ROBERT, Ph. G. Drug clerk, Portland, Ore.
PUGH, WILLIAM PATTERSON. Cottonwood Falls, Kas. Traveling salesman for Seely Manufacturing Company, Detroit, Mich.
WHITE, HOMER ALBERT, Ph. G. Member of firm of D. A. White & Son, Eudora, Kas. Member of Kansas Pharmaceutical Association.

Class of 1892.

- ALLEN, MAUDE BEATRICE.* ?
COMBS, ROBERT.* Chemist in sugar house, Cuba.
DE DONDER, ACHILLE, Ph. G. Drug clerk, St. Mary's Kas.
DAY, HAROLD, Ph. G. Lamar, Colo.
DIGGS, FRED LE PORTE, Ph. G. Drug clerk, Merwin, Mo.
EICHOLTZ, ALEXANDER J., Ph. G.
MCCLUNG, CLARENCE ERWIN, Ph. G. Student. Chemist in sugar house W. P. Miles & Co., Burnside, La. Member Kansas Academy of Science.
MCCREIGHT, SAMUEL MARLIN, Ph. G., M. D. Oskaloosa.
PRIESTLY, CARRIE.* Student in Kansas State University.
RANKIN, VICTOR ALEXANDER.* Clerk for Craigin & Des Marais, Fruitvale, Cal.
RANKIN, HERBERT JOHN. Pharmacist, La Junta, Colo.
YOUNGBERG, JOHN EDWARDS, Ph. G. With Pottenger & Pyle Drug Company, Hiawatha, Kas. Member Kansas Academy of Science and of Kansas Pharmaceutical Association.

Class of 1893.

- BAKER, DEFOREST, Ph. G. St. Joseph, Mo.
BERGMAN, LOUIS HOUSE. Clerk for the Geo. Leis Drug Company, Lawrence, Kas.
LIEURANCE, CALVIN DELBERT, Ph. G. Pharmacist, Cherry Vale, Kas.
NORBERG, GEORGE BENJAMIN, Ph. G. Prescription clerk for Geo. Eyssel, Kansas City, Mo.
RUDIGER, ALFRED POHLER, Ph. G. Clerk for Leonard & Hamlin, druggists, Lawrence, Kas.
SEILER, NELSON HUGHES, Ph. G. Clerk for H. L. Raymond & Co., Lawrence, Kas.
WATT, ROBERT ÆNEAS. Prescription clerk for W. G. Lomos, Waxahacie, Tex.
WALLICK, ELLSWORTH FRANK. Prescription clerk for Shockey & Pearson, Pueblo, Colo. Member of Colorado Scientific Society.
WILSON, WALTER EVERETT, Ph. G. Prescription clerk for B. H. McEckron & Son, Concordia, Kas. Member of the Kansas Pharmaceutical Association.
YOUNGBERG, ALFRED, Ph. G. Pharmacist, Ottawa, Kas.

Class of 1894.

- BARBER, PERRY BIGELOW, Ph. G. Pharmacist, Lawrence, Kas.
CLARK, WILLIAM MARSHEL, Ph. G.
ERNST, HENRY, Ph. G.
FOX, HARRY I., Ph. G.* Hatter, Atchison, Kas.
HALER, GEORGE ERVIN, Ph. G. Pharmacist, Burlingame, Kas.
JENKINS, HERBERT EDWARD, Ph. G. Pharmacist, Seneca, Kas.
JOSLIN, CHARLES EDWARD, Ph. G.

KELLY, THOMAS HENRY, Ph. G. Pharmacist, Olathe, Kas.
NORTHUP, JAMES EDGAR, Ph. G. Pharmacist, Severance, Kas.
OEHLER, FRED. C., Ph. G.
PARKER, ORIN HERBERT, Ph. G.
STEINBERGER, EARL IRA, Ph. G.
STROTHER, WILLIAM ORANGE, Ph. G. Pharmacist, Frankfort, Kas.
VOELTZEL, LOUIS CHARLES GILBERT, Ph. G.
WOODWARD, BRINTON DARLINGTON, Ph. G.
REYNOLDS, CARL D.

Class of 1895.

BAILEY, THOS., Ph. G.
BOWEN, W. F., Ph. G.
CLARKE, A. B., Ph. G.
COWMAN, E. E., Ph. G.* Topeka. Pharmacist for the State Insane
Asylum.
STUART, R. E., Ph. G.
SCHOPFLIN, ED. F., Ph. G.
KELLING, W. B., Ph. G.

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University of Kansas.

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OF THE
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Catalogue

of the

School of Pharmacy

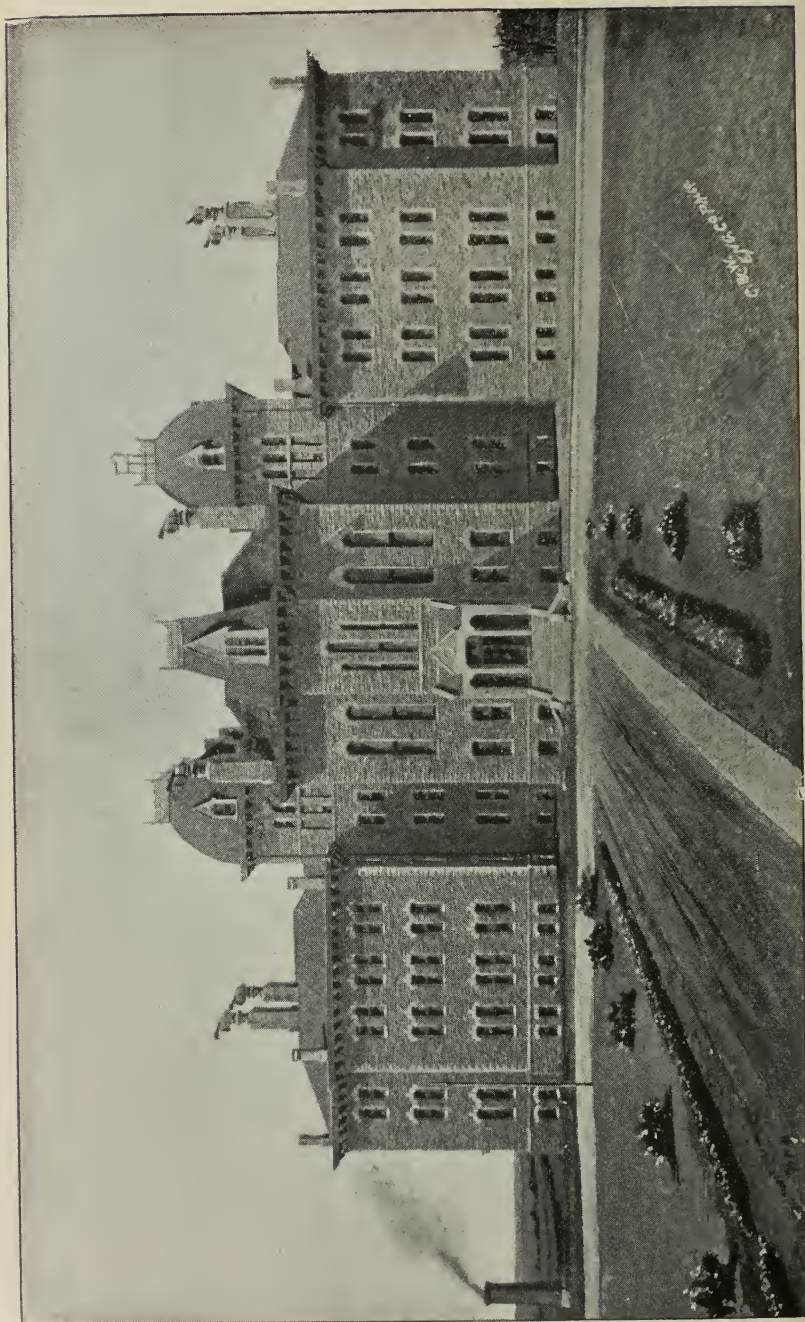
for the

Collegiate Year 1895='96,

including

Announcements for 1896='97.

Lawrence, Kas.
1896.



THE UNIVERSITY OF KANSAS. (Main Building.)

University of Kansas.

Catalogue

of the

School of Pharmacy

for the

Collegiate Year 1895='96,

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Announcements for 1896='97.

Lawrence, Kas.
1896.

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Announcements.

For 1896-'97.

Sept. 9, Wednesday—First term begins.

Sept. 9, 10, Wednesday and Thursday—Examination of candidates for admission, and presentation of certificates from high schools, academies, and other institutions.

Sept. 11, Friday—General assembly of students, and annual address in University Hall, at 10 A. M.

Nov. 12, Thursday—Second half term begins.

Nov. 26, 27, and 30, Thursday, Friday, and Monday—Thanksgiving recess.

Dec. 15, Tuesday, 8 P. M.—Christmas concert, by Music department, School of Fine Arts.

CHRISTMAS RECESS,

Saturday, December 19, to Monday, January 4, inclusive.

Jan. 4, Monday—Christmas recess ends.

Jan. 25 to 29, Monday to Friday, inclusive—Semiannual examinations.

Feb. 1, Monday—Second term begins.

March 31, Wednesday—First half term ends.

April 1 to 5, Thursday, Friday, and Monday—Spring recess.

April 6, Tuesday—Second half term begins.

May 31 to June 4, Monday to Friday, inclusive—Annual examinations.

June 3, Thursday—Commencement concert, by Music department, School of Fine Arts.

June 6, Sunday, 8 P. M.—Baccalaureate sermon.

June 8, Tuesday, 8 P. M.—Annual Alumni address.

June 9, Wednesday, 10 A. M.—Commencement exercises.

Organization and Government.

By act of the legislature at the session of 1885, it was provided as follows: "That the Board of Regents of the State University be directed to establish, without delay, a chair of pharmacy in said institution."

It was further enacted at the same session of the legislature that "The Board of Regents of the State University shall appoint five registered pharmacists, who shall hold office for the term of four years, to conduct the examination of all graduates in pharmacy, and sign the certificates of graduation."

In accordance with this action of the legislature, the Board of Regents, at its meeting in June, 1885, elected Lucius E. Sayre, Ph. G., of Philadelphia, a practical pharmacist, and an experienced instructor, late professor of pharmacy in the Woman's Medical College, and instructor in materia medica in the Philadelphia College of Pharmacy, and author of "Organic Materia Medica and Pharmacal Botany," as professor of pharmacy, and ordered the organization of the department at the beginning of the fall term, September 9, 1885. At a subsequent meeting, the Board of Examiners in Pharmacy was appointed.

Further provision was made for the University by the legislature of the state in an act approved February 25, 1889, and entitled "An act to provide for the government and maintenance of the University of Kansas." This act, repealing all former legislation, bearing upon the same topics, continues the name of The University of Kansas, and its location at Lawrence, in Douglas county.

It further enacts that the University shall provide the means of acquiring a general and thorough knowledge in literature, the sciences, and the arts; and also provide students who desire to pursue special studies, with the most approved appliances, authorities and instruction to insure the greatest knowledge and research in any special branch or learning connected with university education; that it shall consist of three departments: I. A department of the literatures; II. A department of the sciences; III. A department of the arts; and that within these three departments there shall be established such schools as the Regents, in connection with the Faculty, may order. The same law further enacts that the government of the University shall be vested in a board of seven Regents, six of whom shall be appointed by

the governor and confirmed by the senate, and whose term of office shall be four years; that the Board of Regents shall be a body corporate, under the name of "The Regents of the University of Kansas," and as such may sue and be sued, make contracts, and hold and transfer property, both real and personal, for the University.

The Board of Regents is also invested with the power to elect a Chancellor, who shall be the chief officer of the University; to appoint professors, assistants, tutors; to increase and diminish their number as the interest of the University may require; to employ a janitor, librarian, and such other officers and employees as in their judgment the needs of the University require.

The Board is also empowered to confer such degrees and grant such diplomas as are usually conferred and granted by by other institutions of learning.

Board of Regents.

F. H. SNOW, LL. D.,

PRESIDENT.

HON. C. S. GLEED*.....	Topeka.....	Term expires 1897
HON. J. P. SAMS.....	Seneca.....	" " 1897
HON. C. F. SCOTT.....	Iola.....	" " 1899
HON. H. S. CLARKE.....	Lawrence.....	" " 1897
HON. J. W. FORNEY.....	Belle Plaine.....	" " 1899
HON. F. G. CROWELL.....	Atchison.....	" " 1899

Officers of the Board.

F. H. SNOW.....	<i>President.</i>
J. P. SAMS.....	<i>Vice-President.</i>
C. F. SCOTT.....	<i>Secretary.</i>

Officers of the University.

F. H. SNOW.....	<i>Chancellor.</i>
R. K. MOODY.....	<i>Secretary, Treasurer, and Purchasing Agent.</i>
E. F. ENGEL.....	<i>Registrar.</i>
C. H. GOODRICH.....	<i>General Agent for University Lands.</i>
T. C. WHITE.....	<i>Superintendent of Buildings and Grounds.</i>

Committees of the Board.

F. H. SNOW, *ex officio* Chairman of all Committees.

Instruction:

C. F. SCOTT.
J. W. FORNEY.
J. P. SAMS.

Library and Apparatus:

C. S. GLEED.
C. F. SCOTT.
H. S. CLARKE.

Finance:

J. P. SAMS.
J. W. FORNEY.
F. G. CROWELL.

Buildings, Grounds, and Supplies:

H. S. CLARKE.
C. S. GLEED.
F. G. CROWELL.

University Lands, and Endowments:

C. S. GLEED.
J. P. SAMS.
J. W. FORNEY.

Reports and Publications:

C. F. SCOTT.
J. W. FORNEY.
F. G. CROWELL.

Auditing of Accounts:

F. G. CROWELL.
J. P. SAMS.
H. S. CLARKE.

* To fill vacancy caused by the resignation of Hon. O. L. Moore, of Abilene.

The Faculty.

FRANCIS HUNTINGTON SNOW, PH. D., LL. D., PRESIDENT,
Botany.

LUCIUS ELMER SAYRE, PH. D., DEAN,
Pharmacy and Materia Medica.

EPHRAIM E. MILLER, A. M.,
Mathematics.

WILLIAM HERBERT CARRUTH, A. M., PH. D.,
German.

EDGAR HENRY SUMMERFIELD BAILEY, PH. D.,
Chemistry and Toxicology.

ARTHUR GRAVES CANFIELD, A. M.,
French.

LUCIEN IRA BLAKE, PH. D.,
Physics.

CHARLES GRAHAM DUNLAP, A. B., LITT. D.,
English Literature.

SAMUEL WENDELL WILLISTON, M. D., PH. D.,
Anatomy and Physiology.

EDWIN MORTIMER HOPKINS, PH. D.,
English and Rhetoric.

ALFRED HOUGHTON CLARK,
Drawing.

ERASMUS HAWORTH, M. S., PH. D.,
Mineralogy.

HENRY BYRON NEWSON, PH. D.,
Associate Professor of Mathematics.

WILLIAM CHASE STEVENS, M. S.,
Associate Professor of Botany.

EDWARD CURTIS FRANKLIN, M. S., PH. D.,
Associate Professor of Chemistry.

DAVID HULL HOLMES, PH. D.,
Associate Professor of Latin.

HANNAH OLIVER, A. M.,
Assistant in Latin.

H. FOSTER JONES, A. B.,
Assistant in English.

ELMER FRANKLIN ENGEL, A. B.,
Assistant in German, and Registrar.

EUGENIE GALLOO, A. B.,
Assistant in French.

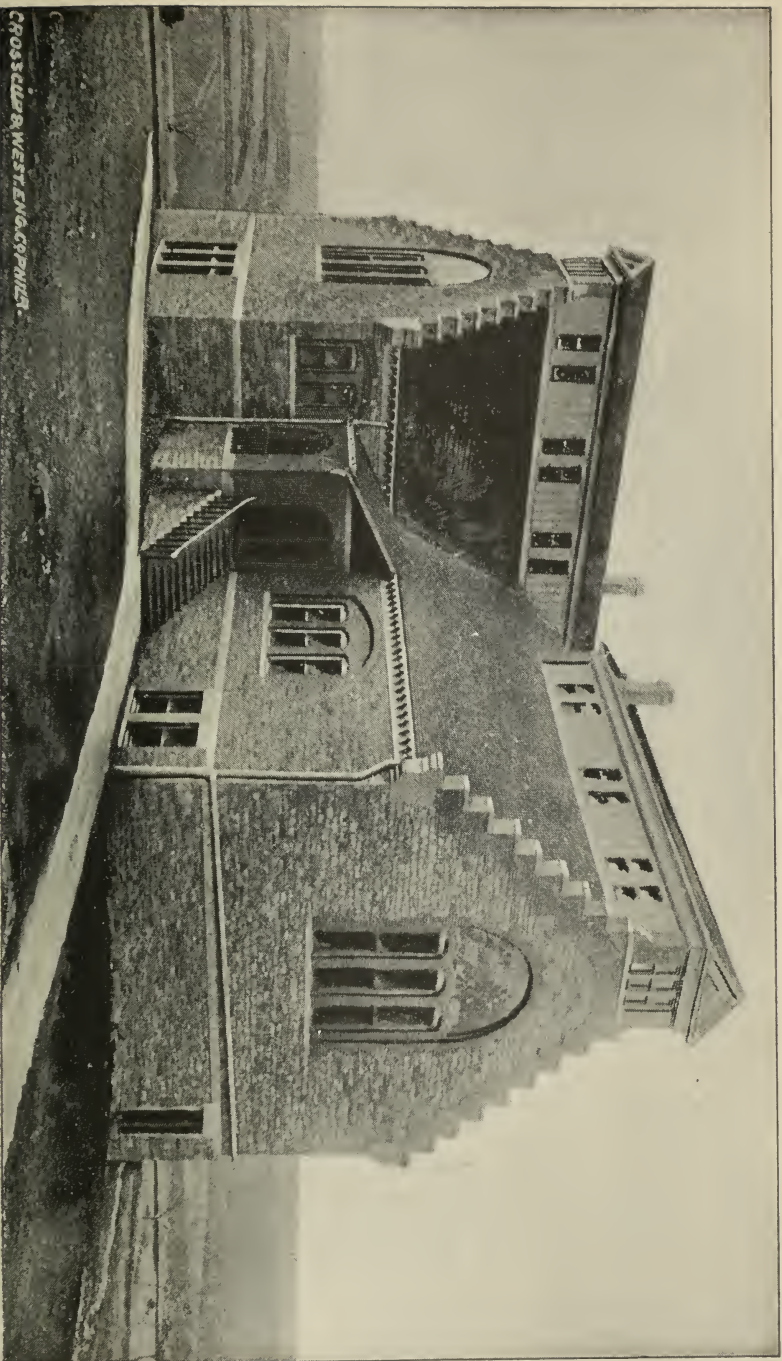
ARTHUR ST. CHARLES DUNSTAN, C. E.,
Assistant in Physics.

MARTIN EVERETT RICE, M. S.,
Assistant in Physics and Mathematics.

MARSHALL ALBERT BARBER, A. B., A. M.,
Assistant in Botany.

GEORGE WAGNER, PH. C.,
Assistant in Pharmacy.

WILLIAM MARION WHITTEN, B. S.,
Assistant in Chemistry.



CROSSLEY & WESTLAND, C.P. 1912.

CHEMISTRY AND PHARMACY BUILDING.

The School of Pharmacy.

THE EDUCATIONAL SCOPE OF THE SCHOOL.

The object of this School is to give to its students a thorough, practical training in those branches that are most useful to one wishing to engage in pharmaceutical work of any kind. The courses are arranged logically and progressively, the instruction is done by modern methods, and the whole work is carried on in the spirit of those principles which in their application to other classes of modern technical schools have proved so eminently successful.

LENGTH OF COURSES.

The School offers two courses, one of two years and one of four years, each school year embracing nine months.

No shorter course is offered because to discerning educators it has long been clear that any short cuts to knowledge result only in superficial cramming, and often are worse than useless.

TERMS OF ADMISSION.

A.—For Two Years' Course.

Candidates for admission to the two years' course will be examined in the following studies:

1. Arithmetic, including the metric system.
2. History of the United States.
3. Geography, descriptive and physical.
4. English Grammar and Composition.
5. Civil Government. Thorpe and Hodder's Civil Government of the United States and of Kansas, or its equivalent.
6. Physics. Gage.

B.—For Four Years' Course.

The requirements for admission to the Freshman class are as follows:

Physical Geography.

General History.—Myers, Sheldon, Barnes, or Fisher.

Civil Government. Thorpe and Hodder's Civil Government of the United States and of Kansas, or its equivalent.

Algebra.—Through simple and quadratic equations.

Geometry.—Plane and solid.

Physics.—Appleton's School Physics; Gage's Elements of Physics.

English.—One year.

French.—One year.*

German.—One year.*

Admission by Certificate.

By authority of the Board of Regents, the Faculty will admit students into the School of Pharmacy upon the certificate of any president, superintendent or principal of any college, academy, or other incorporated institution of learning, or of any high school, showing that such students have completed all the above-named preparatory studies.

In all cases, if the first term's work in the University develop the fact that the student's preparation has been imperfect, the right is reserved by the Faculty to require further and satisfactory examination.

SPECIAL STUDENTS.

Persons of good character who desire, for reasons satisfactory to the Faculty, to pursue some special line of study, without becoming candidates for a degree, are allowed to enter as special students. No entrance examinations are required of such special students further than may be necessary to satisfy the instructors under whom the studies are taken of their ability to do the work.

Special students are subject to the same regulations as regular students with regard to the quality of work performed, and attendance at recitations and examinations, but not as to the number of studies to be pursued. The Faculty may at any time deprive any special student of his privileges, if it appear that he is abusing or neglecting them.

REGISTRATION.

The candidate for admission to the School of Pharmacy should present himself to the Registrar for examination, or registration of grades from high school, on the dates indicated under "Announcements." If entitled thereto, he will receive a certificate of registration, copies of term schedule, regulations, etc.

*Students having credit for three years of Latin may be excused from either the French or German required.

Program of Studies.**A.—TWO YEARS' COURSE.****JUNIOR YEAR.***First Term:*

Pharmacy (*a*), every day, at 9. Mr. Wagner.
Pharmacognosy (*b*), every day, at 9. Mr. Wagner.
General Chemistry, daily, at 10. Professor Franklin.
Physics, Monday, Wednesday, and Friday, at 11; laboratory,
Thursday and Friday, 2 to 5. Mr. Dunstan.

Second Term:

Pharmacy, Monday, Wednesday, and Friday, at 8. Mr.
Wagner.
Pharmacognosy, Tuesday and Thursday, at 8. Mr. Wagner.
Latin, daily, at 9. Miss Oliver.
Botany, daily, 10 to 12. Professor Stevens and Mr. Barber.
Qualitative Analysis (*a*), daily, 2 to 5. Professor Bailey.
Pharmaceutical Laboratory (*b*), daily, 2 to 5. Mr. Wagner.

SENIOR YEAR.*First Term:*

Pharmacy (*a*), daily, at 12. Professor Sayre.
Materia Medica (*b*), daily, at 12. Professor Sayre.
Histological Botany (*a*), daily, 2 to 4. Professor Stevens.
Quantitative Analysis (*b*), daily, 2 to 5. Professor Bailey and
Mr. Whitten.
Pharmaceutical Testing and Assay (*b*), Monday, Wednesday,
and Friday, 9 to 12. Professor Sayre and Mr. Wagner.
Physiological Chemistry and Urinalysis (*b*), Tuesday and
Thursday, 9 to 12. Professor Sayre.
Physiology (*a*), daily, at 4. Professor Williston.
Mineralogy (*b*), daily, at 4. Professor Haworth.

Second Term:

Pharmacy, Monday, Wednesday, and Friday, at 9. Professor
Sayre.
Materia Medica, Tuesday and Thursday, at 9. Professor
Sayre.
Organic Chemistry, daily, at 12. Professor Franklin.
Microscopic Examination of Drugs (*a*), 2 to 4. Professor
Sayre.
Toxicology (*b*), at 12. Professor Bailey.
Preparation of thesis.

B.—FOUR YEARS' COURSE.

The four years' course, to be inaugurated the coming school year (1896-'97), will be conducted according to the following outline:

FIRST YEAR.

First Term:

Chemistry.
Algebra.
English.

Second Term:

Qualitative Analysis (a).
Botany.
Scientific German.
English.

SECOND YEAR.

First Term:

Physics.
Quantitative Analysis.
Scientific French.

Second Term:

Advanced Inorganic Chemistry.
Physics.
Materia Medica (a).
Pharmacy (b).

THIRD YEAR.

First Term:

Pharmacy (a).
Materia Medica (b).
Pharmaceutical Chemistry.
Mineralogy (b).
Assaying (a).

Second Term:

Pharmacy Laboratory.
Organic Chemistry.
Structural Botany.

FOURTH YEAR.

First Term:

Bacteriology (a).
Organic Preparations.
Physiological Chemistry (b).
Physiology.

Second Term:

Therapeutics (b).
Plant Analysis (a).
Microscopic Study of Drugs (a).
Original Research (b).
Thesis.

Outlines of Studies.

A.—TWO YEARS' COURSE.

JUNIOR YEAR.—FIRST TERM.

Pharmacy.—Coblentz or Remington, and Sayre's Essentials of Pharmacy. This course will consist chiefly of recitations and demonstrations of apparatus and methods. It will cover, approximately, the following subjects: Metrology, methods of utilizing heat, solution, filtration, decantation, clarification, pulverization, granulation, crystallization, sublimation, percolation, distillation, dialysis. Mr. Wagner.

Pharmacognosy.—Sayre's Materia Medica and Pharmacognosy. Consists of lectures, recitations and laboratory work, and treats of the sources, varieties, nomenclature, physical properties, methods of recognition, and chief adulterations of chemicals and crude organic drugs of the pharmacopoeia. Students will be supplied with ample specimens, for purposes of study, of all drugs considered in this course. Mr. Wagner.

Chemistry.—Remsen's Chemistry. This course lays the foundation to most of the later work of the student. There will be discussed the chemical characteristics and relationships of the more common elements and the more important theories of modern chemistry. The technical side of the subject will be given much weight, and special stress will be laid on points that are of particular interest to the pharmacist. Professor Franklin.

Physics.—Carhart & Chute's Text-book and Manual. Consists of lectures and laboratory exercises in general physics, especially of such branches of it as are found useful in pharmaceutical work. Mr. Dunstan.

JUNIOR YEAR.—SECOND TERM.

Pharmacy.—United States Pharmacopoeia. This is a continuation of the first term's work. Special attention will be given to pharmaceutical arithmetic, to the meaning and value of pharmacopoeias in general and of the United States Pharmacopoeia especially, and to the more important principles of prescription work. Mr. Wagner.

Pharmacy Laboratory.—Students will be required to apply in the laboratory the knowledge gained in class work. Each one will manufacture in progressive order the principal classes of preparations of the United States Pharmacopoeia, including pills, suppositories, syrups, liquors, tinctures, fluid extracts, scale salts, crystalline salts, chloroform, amyl nitrite, etc. About 80 preparations will be made, and great care will be taken to have each student understand the meaning of every step in his work. Mr. Wagner.

Qualitative Analysis.—During the first half of the second term, the student will devote at least 12 hours per week to the study of qualitative analysis. He follows a systematic course of work in the laboratory, and lectures are given at intervals upon this work. At the close of the course, the examination, which is a practical one, is so conducted that the student must demonstrate his ability to analyze unknown mixtures. Professor Bailey.

Latin.—Robinson's Latin Grammar of Pharmacy and Medicine. This important subject receives careful and thorough attention, and throughout the course great care is taken to keep always in sight the object for which Latin is taught to pharmacy students. Miss Oliver.

Pharmacognosy.—This is a continuation of the first-term work in pharmacognosy. Mr. Wagner.

Structural Botany.—Two hours a day throughout the term are devoted to the laboratory study of plant morphology. Weekly lectures accompany the laboratory work, and the student is required to record by drawings and descriptions all his laboratory observations. Field excursions are made every Saturday. Professor Stevens and Mr. Barber.

SENIOR YEAR.—FIRST TERM.

Pharmacy.—Remington's Practice and Sayre's Essentials. A review of the important features of the Junior course is given at the beginning of the year, followed by lectures devoted more particularly to pharmaceutical chemistry. The subsequent lectures embrace a more careful study of the organic substances used in medicine, their constituents, chemical and physical characteristics, and application in the preparations of the United States Pharmacopoeia. Each drug is considered individually, but drugs and their preparations are so grouped as to make prominent a study of the proximate principles. Subsequently, the organic substances obtained from the animal kingdom are considered.

In the second half of this term, laboratory work in drug assay, detection and quantitative estimation of adulterations and impurities, and standardization of pharmaceutical preparations, occupies every afternoon of the week. Professor Sayre.

Crystallography and Mineralogy.—Crystallography and mineralogy are taught during the second half of the first term in the Senior year. A few weeks are devoted to crystallography, after which the different minerals are studied, the most common ones being studied in considerable detail. Instruction is given by lectures and laboratory work. The former gives general outlines of the subjects studied; the latter includes a study of

crystal models and natural crystals, blowpipe exercises, and determinative mineralogy, for which both the chemical and physical properties of the minerals are regarded. Professor Haworth.

Materia Medica.—Maisch's *Materia Medica* and Sayre's *Materia Medica* and *Pharmacognosy*. Special stress is laid upon chemical constitution, physical characteristics, and structure of the various official, and of the more prominent unofficial drugs. Professor Sayre.

Outlining in Drawing.—Since it is especially desirable that students be well prepared for the drawing in botany and *materia medica*, arrangements have been made with the professor of drawing and painting, A. H. Clark, for a short course suitable for the needs of Pharmacy students.

Histological Botany.—A microscopical study of plant structure. Each student is provided with a compound microscope and reagents necessary for the work. Professor Stevens.

Physiology.—Martin's *Human Body*. Daily lectures, with collateral reading and frequent examinations, supplemented by diagrams, lantern slides and other illustrative apparatus. Professor Williston.

Quantitative Analysis.—In the Senior year, the first half term is devoted to the study of quantitative analysis, with special reference to the needs of the practical pharmacist. The aim is to secure accuracy in the results and careful habits in manipulation, rather than to have the student perform a large number of analyses. Professor Bailey and Mr. Whitten.

Drug Assay and Pharmaceutical Testing.—Laboratory work. A special course is outlined by Professor Sayre. A scheme for the analysis is placed in the hands of the student and description of methods of analysis is supplemented by dictation. Professor Sayre and Mr. Wagner.

SENIOR YEAR.—SECOND TERM.

Pharmacy.—Remington's *Practice* and Sayre's *Essentials*. The lectures in this course embrace a more careful study of the organic substances used in medicine, their constituents, their chemical and physical characteristics, and of the application of these in the preparations of the United States Pharmacopoeia. While the drugs and preparations of the United States Pharmacopoeia claim principal place as the more important, due attention is paid to nonofficial ones, and in both cases great care is given to the detection of impurities by the official and other methods of testing. Professor Sayre.

Materia Medica and Therapeutics.—Potter's *Materia Medica* and *Therapeutics*. During this term the physiological action and therapeutical application of drugs are considered, and special lec-

tures are given occasionally by local physicians, and the students receive all the advantages given to preparatory medical students. Professor Sayre.

Organic Chemistry.—Remsen's Organic Chemistry. Lectures and laboratory work. Professor Franklin.

Physiological Chemistry and Urinary Analysis.—Novy's Laboratory Manual. Laboratory work and recitations, supplementing the work in materia medica and therapeutics. In the laboratory, chemical examination of the fluids and secretions of the body is made, and the digestive ferments are extracted, purified, and studied. The organic salts occurring in the body are also prepared.

The subject of urinary analysis is taught by lectures and recitations, together with laboratory practice in the physiological and microscopical laboratories. Urine is studied in its normal condition and its constituents estimated. Samples of pathological urine are secured through physicians and examined for abnormal constituents. Professor Sayre.

Toxicology.—Instruction is given by lectures and laboratory work. The instruction in the class room is demonstrated in the laboratory by experiments upon the lower animals and upon organic tissues. A large collection of the best works on this subject is placed at the student's disposal for reference. Professor Bailey.

Microscopical Examination of Drugs.—This consists mostly of work in preparing and mounting sections of organic drugs, and studying the characteristics of the same. With this laboratory practice, drawings are required which shall bring out the structure of the peculiar representative tissues in each case. Professor Sayre.

Thesis.—This work embodies the results of research by the student in the laboratory and library. The subject is to be selected before the end of the first half of this term; an outline of the proposed investigation is to be presented, with references to the literature, at the beginning of the second half term; and the completed report or thesis is to be ready before the end of the term. For many subjects, the literary research may be made as valuable as the experimental investigation. Preparatory to this work, students are required to read papers before the Pharmaceutical Society, or present them to the Dean to be read.

B.—FOUR YEARS' COURSE.

The more technical studies of the four years' course correspond to those described above. The general studies are the same as those offered by the School of Engineering, and will be taken in the classes of that school.

Examinations.

Examinations will be given at the end of each term upon the work of the term. These term examinations are conducted by the Faculty, and are usually written. Oral as well as written quizzes are also given at frequent intervals during the term. At the close of the term each student is given a transcript of his record as shown by the files of the Registrar's office.

Degrees.

The degree of Pharmaceutical Chemist (Ph. C.) is conferred on all students who satisfactorily complete the two years' course of this School. Those who finish the four years' course receive the degree of Bachelor of Science (B. S.) in Pharmacy.

Practical experience, being a matter over which the University can have absolutely no control, is no longer a requirement for obtaining either of the above degrees.

Optional Studies.

The studies named below may be taken by any graduate of this School, or by others who are prepared for the work. They are advanced studies in the several departments, and the work is done with the regular advanced classes.

OFFERED BY DEPARTMENT OF PHARMACY.

1. Manufacture of artificial fruit essences and other compound ethers.
2. Drug assaying; standardization of crude drugs, and their preparation; and the valuation of chemicals.
3. Plant analysis; a systematic course from a chemical standpoint.
4. Analysis of foods; advanced work in physiological chemistry, estimation of the value of such articles as butter, lard, coffee, flour, etc., and the determination of adulterations.
5. Analysis of nostrums; determination of composition of articles with secret formulas.
6. Original research; special investigation, requiring the service of more than one department in the University, can be arranged for by submitting the plan of the work to the Pharmacy Faculty.

OFFERED BY DEPARTMENT OF CHEMISTRY.

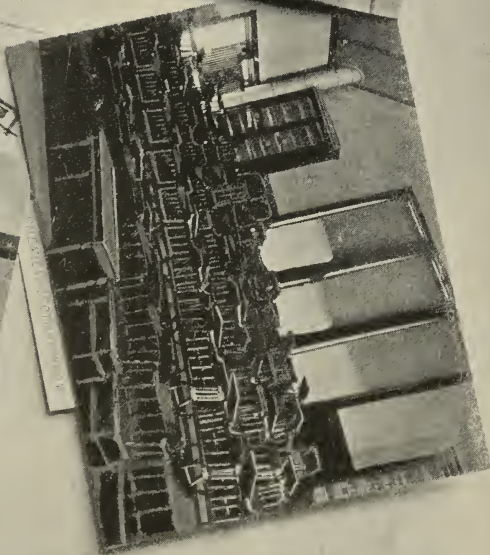
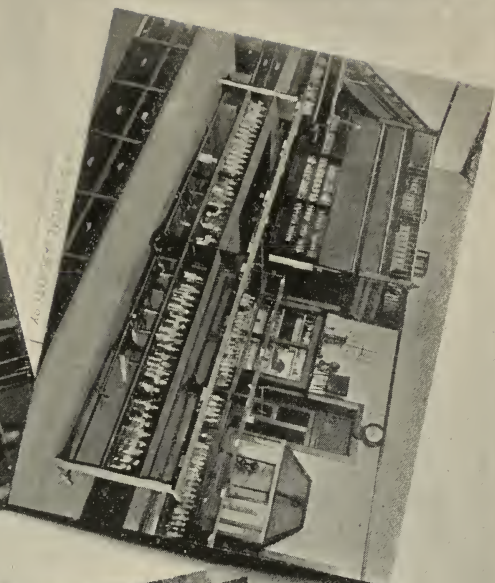
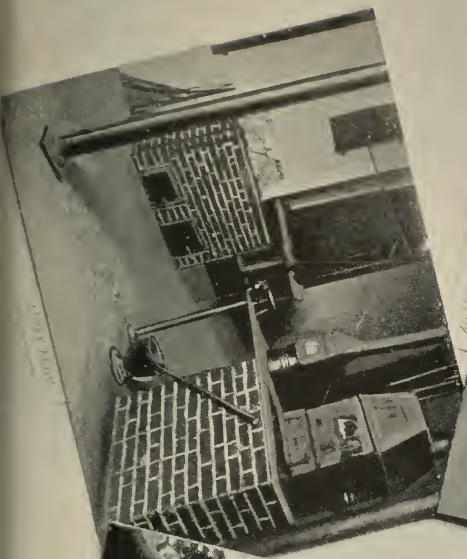
1. Organic preparations.
2. Advanced quantitative analysis, including water analysis, mineral-water analysis, and sugar analysis.
3. Blowpipe analysis, and mineralogy.
4. Assaying of ores—gold, silver, etc.

OFFERED BY DEPARTMENT OF BOTANY AND ENTOMOLOGY.

1. Cryptogamic botany; advanced work in structural botany; lectures and laboratory work.
2. Physiological botany.
3. Histological botany.
4. Bacteriology; lectures and laboratory work.

OFFERED BY DEPARTMENT OF PHYSICS.

1. Electricity and magnetism; heat and light; lectures and experimental demonstration. Laboratory work four hours a week.



Miscellaneous Information.

UNIVERSITY PRIVILEGES.

Students of this School are accorded all the privileges of students in other departments. They recite with the collegiate classes in botany, chemistry, and such other studies as are common to the various departments of the University.

LABORATORY FACILITIES.

Students have access to and are required to do work in five different laboratories, i. e., those of qualitative analysis and general chemistry, quantitative analysis and organic chemistry, physics, pharmacy, pharmacognosy, botany and mineralogy. Students doing advanced work have also the right of using any and all other laboratories their work may require.

THE LIBRARY.

The University owns a first-class library of nearly 30,000 volumes, of which about 1,000 relate to pharmacy and its allied branches. A full supply of current periodicals is always at hand. The student has free access to books as well as periodicals, and free use of the very excellent reading rooms of the Library building.

JACOBS SCHOLARSHIP.

A scholarship under the personal direction of the Dean of the School has been established by Mr. Joseph Jacobs, of Atlanta, Ga. The sum now amounts to \$100. This is intended to be loaned to young men who prove themselves worthy to receive it by their careful and earnest work while in the School. The loan shall be without interest for such a time after the student's graduation as circumstances render expedient.

THE PHARMACEUTICAL SOCIETY.

This society was organized in December, 1886, by the students and teachers of the department for the purpose of assisting each other in the study of the sciences especially related to the art of pharmacy, in the practical applications of the same, and for friendly intercourse.

It holds its meetings every two weeks. At this time subjects of pharmaceutical interest are presented by the members present, and papers are read and discussed bearing upon subjects of cur-

rent interest in pharmaceutical and chemical circles. The students of the department are expected to attend these meetings, and they are required to do work suitable for presentation to the society. Credit will be given for all work done in connection with the society.

This society has been a means of stimulating to original investigations, and of bringing together the students of both Junior and Senior courses. It forms a valuable supplement to the regular course of study.

As an adjunct to the society, an "annex" was established in 1890, whose aim it is to secure positions for graduates, and clerks for employers who are graduates of the School. To accomplish this, a list of the alumni has been compiled, showing the present occupation of all graduates of the School, and correspondence has been established between the profession and the University.

FEEES.

Tuition in the School is free to Kansas students. The state supports the School, and looks for no pecuniary return from the students.

Non-residents of the state are required to pay a fee of \$25 per annum. If such students complete the work of this School in less than two years (unless one year shall have been taken in some other college of pharmacy), a double fee will be required.

In the several laboratories, charges are necessary to cover the actual expense for the material used and for breakage of apparatus. In the two years' course the charges are as follows:

Junior Year:

Pharmacy, \$20; partly returnable.

General Chemistry, \$12; partly returnable.

Qualitative Analysis, \$6; partly returnable.

Physics, \$2.

Botany, \$1.

Senior Year:

Pharmacy, \$20; partly returnable. Includes charges for microscopy.

Quantitative Analysis, \$7; partly returnable.

Botany, \$1.

Organic Chemistry, \$10; partly returnable.

Mineralogy, \$1.50.

The charges of the four years' course are similar in extent.

A graduating fee of \$5 is required of all students. No charge is made for the diploma.

All fees must be paid before registration, at the opening of the school year.

EXPENSES.

Day board in clubs varies, according to the economy practiced, from \$1.50 to \$2.25 per week. On this plan, a company of students appoints a steward or a committee to arrange terms with a competent housekeeper, to buy provisions as needed, to keep a list of rooms for rent in the vicinity, and to collect from the membership the estimated cost in advance for each week. These students generally furnish their own rooms, and provide lights, fuel, etc. An unfurnished room rents for about \$2 per month.

Price of board cannot be stated in advance, as much depends upon the demands of the student. Table board ranges from \$2 to \$3.50 per week.

The total expense incurred by students, including clothing, may be seen by reference to the table of statistics appended, which was prepared under the direction of Mr. Adams, associate in history and sociology, who has collected some information in regard to college expenses. This was done by means of circulars sent to students asking for items of expense for the last collegiate year. Thus, the Sophomore class returned answers for the Freshman year, and so on. It was found impossible to secure a sufficient number of returns from those who had graduated to make any just average of expenses of the Senior year; hence, no expenses are given for that year. Of the other classes, answers from students having homes in Lawrence were cut out, because a part of their expenses were not given, e. g., board. Of the remaining students, two-thirds or more of each class sent in expense lists. The items given below are averages computed from those lists. The expenses are for the college year of nine months. They show the expenses of the men of the University, and not of the women.

See next page.

AVERAGE YEARLY EXPENSE FOR STUDENTS.

AVERAGES FOR	Books and stationery.	Clothing.	Room rent.	Board.	Fuel and light.	Washing.	Sundries.	Total.
FRESHMAN YEAR.....	\$18 92	\$43 68	\$32 30	\$93 76	\$6 36	\$11 06	\$68 83	\$274 91
SOPHOMORE YEAR.....	17 83	62 13	41 58	100 50	5 26	11 52	70 34	309 16
JUNIOR YEAR.....	22 86	55 00	43 03	115 00	7 25	16 49	75 41	335 04
JUNIOR YEAR, LAW COURSE...	33 49	36 46	28 03	96 08	7 57	12 79	46 37	260 79
Average for <i>all</i> students, in- cluding Junior Law Course,	23 28	49 32	36 24	101 34	6 61	12 97	65 24	294 98

These items represent the average. Individual expense accounts showed a wide difference in cost for the year. The highest and lowest returns of total expense made were: Freshmen, highest \$533.25, lowest \$139; Sophomore, highest \$523, lowest \$154.28; Junior, highest \$459, lowest \$190.

First-Year Medical Course.

In order to accommodate students of the University who desire to prepare for the profession of medicine, a course of study has been arranged closely related to the departments of pharmacy, chemistry, and natural history, and including materia medica, human physiology, and comparative anatomy (with dissections).

REQUIREMENTS FOR ADMISSION.

Students will be admitted to the first-year medical course who are ready for admission to the Freshman class of the School of Arts in all English studies.

COURSE OF STUDIES.

First Term:

General Chemistry.—Daily, 10 to 12. Professor Franklin.
Physiology (*a*).—Daily, 2 to 4. Lectures. Professor Williston.
Pharmacy and Pharmacognosy.—Daily, 9 to 10. Mr. Wagner.
Human Osteology and Vertebrate Anatomy (*b*).—Lectures and laboratory work. Daily, 2 to 4. Professor Dyche.

Second Term:

Physiological Chemistry and Urinary Analysis.—Daily (*a*), 2 to 5. Professor Sayre.
Materia Medica.—Monday, Wednesday, and Friday, 9 to 10. Professor Sayre.
Toxicology (*b*).—Daily, 12 to 1. Professor Bailey.
Histology.—Daily, 10 to 12. Lectures and laboratory work. Professor Williston.

During the Junior and Senior years, the student in the School of Arts may, by availing himself of the privilege in the selection of the optional courses offered him, pursue all the above courses, or their equivalents, which may be accepted by medical schools in place of the first year in their regular course in medicine.

No difficulty has been experienced by students who have taken this course in obtaining admission, with proper credits, to any of the larger medical colleges of the country. Among the schools which accept the above as equivalent to the first year of their courses are: Rush Medical College, Chicago; Jefferson Medical College, Philadelphia; Kansas Medical College, Topeka; University Medical College, Kansas City, Mo.; University of Wooster Medical School, Cleveland, Ohio; Kansas City Medical College, Kansas City, Mo.; St. Louis Polyclinic.

University Extension.

The following course of lectures is offered in University Extension.

MEDICAL CHEMISTRY AND SANITARY SCIENCE.

By L. E. Sayre, Ph. G.

1. Inorganic Substances Used in Medicine. Introduction to the course.—Relation of chemistry and sanitary science.—Classification of inorganic substances from a chemical and medical standpoint.—Physiological and therapeutic actions.—Inorganic acids and metalloids.

2. Inorganic Substances (continued). Alkalies, alkaline earths, and metals; their combinations, and physiological and therapeutic actions.

3. Organic Substances. Remedial agents from the vegetable and animal kingdoms.—Methods of extraction and isolation of active organic substances.—How they should be regarded.

4. Organic Substances (continued). Classification from a botanical standpoint.—The relation of this classification to therapeutic action.

5. Active and Poisonous Principles. Methods of obtaining. Chemical and physical properties.—History and properties of the alkaloids.

6. Prominent Combination of Inorganic Substances as Remedial Agents.—By chemical combination and decomposition.—Mechanical mixtures.

7. Remedial Combinations from the Vegetable Kingdom. Extracts, tinctures, infusions, etc.

8. Alcohol and its Derivatives. Ether, chloroform, chloral, iodoform, etc.

9. Antiseptics and Disinfectants. Definition of terms.—Proper use of.—Sanitation.

10. Carbolic Acid and Other Coal-Tar Products. Manufacture.—Chemical and physical properties.—Physiological action.—Relation of chemical to therapeutic properties.

11. Digestive Ferments and Dietetics. Foods.—Principles from the fluids of the body important in the digestive process.—The relation of foods to these principles.

12. General Summary. Relation of remedial agents to sanitary science.—The pharmacopoeia.—The dispensaries.

(For particulars, correspond with Chancellor F. H. Snow.)

Books Used.

TEXT-BOOKS.

Remington's Practice of Pharmacy.
Coblentz's Handbook of Pharmacy.
Sayre's Essentials of Pharmacy (interleaved).
Sayre's Materia Medica and Pharmacognosy.
Remsen's Chemistry.
Robinson's Latin Grammar of Pharmacy and Medicine.
Carhart and Chute's Manual.
Gray's Manual of Botany.
Martin's Human Body.
Chemical Physiology and Urine Analysis (Long).

BOOKS OF REFERENCE.

United States Dispensatory.
National Dispensatory.
United States Pharmacopoeia.
Prescott's Organic Analysis.
Halliburton's Physiology and Pathology.
Watt's Dictionary of Chemistry.
Allen's Commercial Organic Analysis.
Oldberg and Long's Laboratory Manual of Pharmaceutical Chemistry.
Bentley and Trimen, Medicinal Plants.
Pharmacographia Indica.
Flueckiger's Pharmacographia.
Companion to United States Pharmacopoeia (Oldberg and Wall).
Hoffman and Power's Examination of Medical Chemicals.
Attfield's Chemistry.
Home Studies in Pharmacy (Oldberg).
Manual of Chemistry (Simon).
Pharmaceutical and Medical Chemistry (Sadtler and Trimble).
(This last-named book is especially recommended as a book for reference during college course.)

Donations

To the School of Pharmacy, 1895-'96.

PERIODICALS FOR THE READING ROOM.

Weeklies:

- Chemist and Druggist (Pharmaceutical Society), London.
- Medical and Surgical Reporter, Philadelphia.
- Pharmaceutical Journal and Transactions (Pharmaceutical Society), London.

Semimonthlies:

- Pharmaceutical Record, New York.

Monthlies:

- The Registered Pharmacist, Chicago, Ill.
- Indiana Druggist, Indianapolis, Ind.
- Medical Record, Kansas City, Mo.
- Meyer Bros.' Druggist, St. Louis, Mo.
- National Druggist, St. Louis, Mo.
- New England Druggist, Boston, Mass.
- Pharmaceutical Era, Detroit, Mich.
- Pharmaceutische Rundschau, New York.
- Rocky Mountain Druggist, Denver, Colo.
- Western Druggist, Chicago, Ill.
- Western Drug Record, Kansas City, Mo.

APPARATUS AND DRUGS.

- Grosvenor & Son, Boston: Konseals and konseal closing apparatus.

School of Pharmacy.

Roll of Students.

SENIORS.

Carter, Clarence Alvin,	Topeka.
Crafts, John,	Alma.
Dryden, John Lakin,	Buffalo.
Fisher, Dora Catharine,	{ Soldiers' Home,
	{ Leavenworth.
Fuller, Herbert Morton,	Seneca.
Gilmore, Mark Ernest,	Topeka.
Gray, Spurgeon Nathaniel,	Lawrence.
Harbourt, Charles Ross,	Coffeyville.
Hedges, Grace Lydia,	Grinnell, Iowa.
Jacquemin, William Richard,	Oskaloosa.
Kelly, Herma Tabetha,	Burlington.
Lear, James Mason,	Mound Valley.
Mason, Myron Robinson,	Lawrence.
Meyer, August Albert,	Alma.
Miller, James Edward,	Purcell.
McCoy, David Leroy,	Beattie.
Nagles, Leon,	St. Mary's.
Palmer, Charles Francis,	Leon.
Roberts, William Osman,	Lawrence.
Scheffer, Samuel Montgomery,	Minneapolis.
Sprague, Frank Marion,	Hiawatha.
Stewart, John Solomon,	Mulvane.
Wherrell, Orta,	Kansas City.
Wohlfram, Eugene Peter,	Leavenworth.
Woodward, Chester,	Lawrence.
Young, Clarence Floyd,	Topeka.

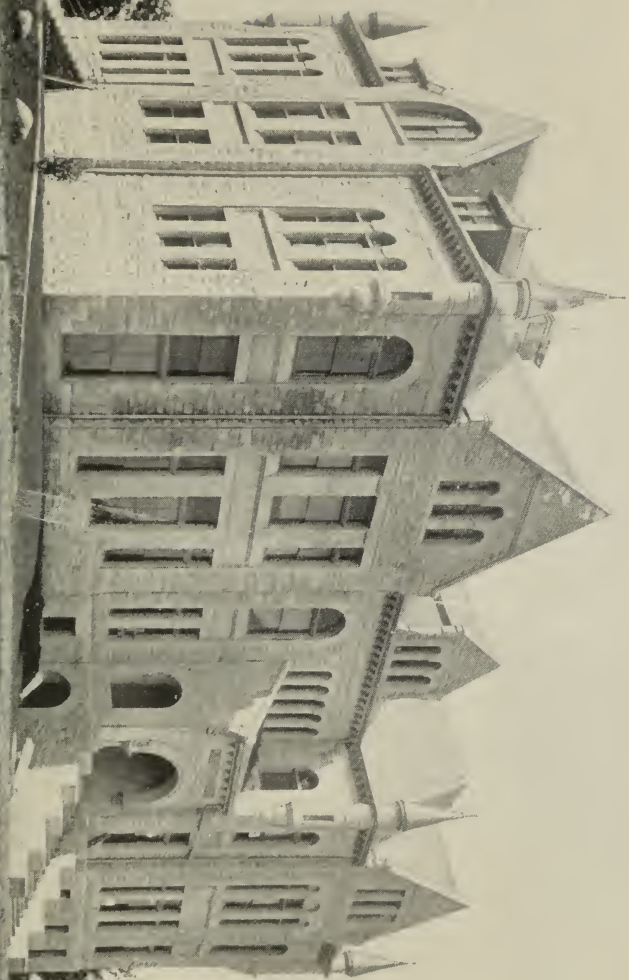
JUNIORS.

Allen, Peter Wesley,	Atchison.
Allen, Rufus Hugh,	Sedgwick.
Baldrige, Charlie Wilson,	Kansas City.
Brady, Francis Frederick,	Springdale.
Bushby, De Witt Coombs,	Lawrence.
Callison, Robert Clyde,	Chillicothe, Mo.
Chastain, Victor Hugo,	Walla Walla, Wash.
Clark, Edward Justin,	Summerfield.

Davis, Alfred Collins,	Lawrence.
Gleason, Leon Wilbur,	Seneca.
Horne, William,	Alma.
Huff, George Washington Edwin,	Savonburg.
Ingham, William Vance,	Lecompton.
Logan, Robert Dickey,	Ottawa.
Long, Don Edmund,	Peabody.
Maxwell, William Lothrop,	Paola.
Meyer, Edward William,	Hutchinson.
Murray, Joseph Patrick,	Lawrence.
McKee, Logan David,	Hutchinson.
McMasters, Robert Truit,	Topeka.
Nabb, Charles White,	Stafford.
Nixon, Willie Elmer,	Girard.
Norris, Guy Brunnaugh,	Garden City.
Ozias, Ernest Lawrence,	Centralia.
Price, Claud Edwin,	Everest.
Price, Loring Templeton,	Burlingame.
Ringer, William Henry,	Paola.
Smith, Almeda Louise,	Lawrence.
Squire, Samuel Webnor,	Chanute.
Stauffer, Jesse Ebersoll,	Lecompton.
Todd, Herbert Gregor,	Topeka.
Tuttle, Charles Henry,	Cedar Vale.
Winston, John Clarence,	Lawrence.

SPECIALS.

Blackburn, Homer J.,	Douglass.
Griffiths, James Ellsworth,	Eureka.
Mathias, John Thomas,	Rosedale.
Rankin, Claude Wesley,	Idana.



SNOW HALL OF NATURAL HISTORY.

Alumni Association.

Officers.

E. E. COWMAN.....	PRESIDENT.
M. H. SEILER, PH. G.....	FIRST VICE-PRESIDENT.
W. S. DICK, PH. G.....	SECOND VICE-PRESIDENT.
P. BARBER, PH. G.....	{ SECRETARY.
	{ TREASURER.
H. L. RAYMOND, PH. G.....	{ EXECUTIVE COMMITTEE.
S. R. BOYCE, PH. G.....	
L. H. BERGMAN.....	

It is the earnest desire of the Faculty to keep the graduates of the School in as close relation to it as possible. To do this, it is necessary to know the residences and employments of the students. This will require the hearty co-operation of the alumni, and it is earnestly hoped that each student will feel it incumbent upon him to notify the Dean of the School upon making a change of residence or place of business. It is desired to give credit for any meritorious work done, or for degrees taken. Graduates will please notify the Dean of such events.

The question mark (?) after a name is a request for information.

The asterisk (*) indicates that the student has not yet had the practical work of two years necessary to secure the degree of Ph. G. Unless otherwise stated, all degrees are taken at the Kansas State University.

Owing to the limited time allowed for the work, the list is not nearly complete, but it is expected that by next year a complete roster can be presented.

Roll of Alumni.

Class of 1886.

RAYMOND, HARRY LEGATE, Ph. G. Member of the firm of H. L. Raymond & Co., retail druggists, Lawrence, Kas. Member of the Kansas Pharmaceutical Association and of the American Pharmaceutical Association.

FOX, EDWARD BAYLESS, Ph. G., A. M. (Highland University). Pharmacist, Washington, Kas. Member of the Kansas Pharmaceutical Association.

WYLER, CARL LEWIS, Ph. G. Galveston, Texas.

Class of 1887.

- APPLEBAUGH, HARRY PERRY, Ph. G. ?
 DAILY, CHARLES C., Ph. G. Drug clerk, 1103 16th street, Denver Colo.
 DICK, WILLIAM SCOTT, Ph. G. Prescription clerk in B. W. Woodward's wholesale and retail drug store, Lawrence, Kas. Member of the Kansas Pharmaceutical Association.
 DEFORD, JOHN HENRY, Ph. G. Deceased.
 HIGHBARGIN, CLAUDE BRITTON, Ph. G. ?
 HOADLEY, CLARENCE REMSEN, Ph. G. Druggist, Burlingame, Kas.
 LINDLEY, CORYDON ENDSLEY, Ph. G. Pharmacist, Lawrence, Kas.
 LINDSAY, SAMUEL WATTS, Ph. G. Pharmacist, McPherson, Kan.
 O'DONNELL, MARTIN, Ph. G. Prescription clerk for Swift & Holliday, Topeka, Kas. Member of the Kansas Pharmaceutical Association.
 PRENTISS, FRANK, B. S., Ph. G. Pharmacist, Aspen, Colo.
 SEXTON, CHARLES LOYAL, Ph. G. Drug clerk, St. Louis, Mo.
 SMITH, ANDREW JACKSON, Ph. G., M. D. Leavenworth, Kas. Member of the Kansas Pharmaceutical Association.
 WOOD, THOMAS HERBERT, Ph. G. Pharmacist, 501 Kansas avenue, Kansas City, Kas.
 WULFEKUHLE, ALBERT FREDERICK, Ph. G. Wholesale grocery, Leavenworth, Kas.

Class of 1888.

- ABBEY, FRANK LINCOLN, Ph. G. Member of the retail drug firm of Abbey & Johnson, Newton, Kas. Member of the Kansas Pharmaceutical Association.
 ALBACH, WILLIAM CLARENCE, Ph. G. Pharmacist, Falls City, Neb.
 HERROLD, HERBERT M., Ph. G. Pharmacist, 232 Rialto building, Kansas City, Mo.
 MCCLURE, ROBERT JAMES.* ?
 McLAREN, GEORGE. ? Atchison.
 RANKIN, ERNEST R., Ph. G. ?
 RICE, MARY ANTOINETTE, A. B., Ph. G. Clerk and bookkeeper for George Leis Drug Company, Lawrence, Kas. Member of the Queen Isabella Association, medical department.
 ROOT, JOHN WILLIAMS, Ph. G. Assayer for Philadelphia Smelting and Refining Company, Pueblo, Colo. Member Colorado Scientific Society.
 SPENCER, CHARLES BORDEN, Ph. G. Pharmacist, Kansas City, Kas.
 TOPPING, ARTHUR ELLSWORTH, Ph. G. Proprietor City Drug Store, Overbrook, Kas.
 WEIDA, GEORGE FRANCIS,* Carlinville, Ill. Member Berlin Chemical Society.

Class of 1889.

- HILL, BRADFORD LORING, Ph. G. ?
HILTON, WILLARD BARTHOLOW, Ph. G. Pharmacist, Cottonwood Falls, Kas.
HIMOE, ERNEST, Ph. G. ? Kansas City.
HOGEBOOM, DENTON. Pharmacist, Pittsburg, Kas.
KAISER, GEORGE FREDERICK, Ph. G. Pharmacist for S. H. Lucas, Ottawa, Kas. Member Kansas Academy of Science.
MORRIS, EDWARD WILLIAM, Ph. G. Clerk in house of D. W. Morris, Emporia, Kas.
PARKER, ROBERT, Ph. G. Deceased.
SCOTT, JOHN NESBITT, Ph. G. Dealer in surgical instruments, 413 New Ridge building, Kansas City, Mo.
SNEPP, LOREN WADE, Ph. G. ?
WEBB, ALFRED T., Ph. G. Pharmacist, Topeka, Kas.

Class of 1890.

- BOAZ, VOLNEY TATE, Ph. G. Girard, Kas.
CLAASSEN, JOHN B., Ph. G. Deceased.
FIEGENBAUM, BENJAMIN F., Ph. G. Manager and junior partner in the firm of Fiegenbaum Pharmacy Company, Lincoln, Neb.
HACKETT, LEROY S., Ph. G. Humboldt, Neb.
KELLEY, SAMUEL J., Ph. G. Pharmacist, Olathe, Kas.
PHILLIPS, CARL. Lawrence, Kas.
THOMAS, ARTHUR W., Ph. G., M. D. Wakefield, Kas.

Class of 1891.

- AMOS, WILBUR STANTON, Ph. G. Member of the firm of W. E. Teare & Co., Dodge City, Kas. Member of the Kansas Pharmaceutical Association.
BROWN, WILLIAM PIERSON, Ph. G. Perry, O. T. Member Kansas Pharmaceutical Association.
HEDGES, FLORENCE LUELLA, Ph. G. Pharmacist and manager for Dr. T. M. Hedges, Grinnell, Iowa.
KENNERLY, JAMES WILSON, Ph. G. Drug clerk for C. D. Arnold, Topeka, Kas.
KENNEDY, JOHN H., Ph. G. Clerk for J. W. Allen & Co., Atchison, Kas.
MULLER, PETER, Ph. G. Pharmacist, Guthrie, O. T.
OATMAN, HOMER CLIFTON, Ph. G., M. D. Lawrence.
POLLOCK, ROBERT, Ph. G. Drug clerk, Portland, Ore.
PUGH, WILLIAM PATTERSON. Cottonwood Falls, Kas. Traveling salesman for Seely Manufacturing Company, Detroit, Mich.
WHITE, HOMER ALBERT, Ph. G. Member of firm of D. A. White & Son, Eudora, Kas. Member of Kansas Pharmaceutical Association.

Class of 1892.

- ALLEN, MAUDE BEATRICE.* ?
 COMBS, ROBERT.* Chemist in sugar house, Cuba.
 DE DONDER, ACHILLE, Ph. G. Drug clerk, St. Mary's, Kas.
 DAY, HAROLD, Ph. G. Lamar, Colo.
 DIGGS, FRED LE PORTE, Ph. G. Drug clerk, Merwin, Mo.
 EICHOLTZ, ALEXANDER J., Ph. G.
 McCLUNG, CLARENCE ERWIN, Ph. G. Student. Chemist in sugar house W. P. Miles & Co., Burnside, La. Member Kansas Academy of Science.
 MCCREIGHT, SAMUEL MARLIN, Ph. G., M. D. Oskaloosa.
 PRIESTLY, CARRIE.* Student in Kansas State University.
 RANKIN, VICTOR ALEXANDER.* Clerk for Craigin & Des Marais, Fruitvale, Cal.
 RANKIN, HERBERT JOHN. Pharmacist, La Junta, Colo.
 YOUNGBERG, JOHN EDWARDS, Ph. G. With Pottenger & Pyle Drug Company, Hiawatha, Kas. Member Kansas Academy of Science and of Kansas Pharmaceutical Association.

Class of 1893.

- BAKER, DEFOREST, Ph. G. St. Joseph, Mo.
 BERGMAN, LOUIS HOUSE. Clerk for the Geo. Leis Drug Company, Lawrence, Kas.
 LIEURANCE, CALVIN DELBERT, Ph. G. Pharmacist, Cherry Vale, Kas.
 NORBERG, GEORGE BENJAMIN, Ph. G. Prescription clerk for Geo. Eyssel, Kansas City, Mo.
 RUDIGER, ALFRED POHLER, Ph. G. Clerk for Leonard & Hamlin, druggists, Lawrence, Kas.
 SEILER, NELSON HUGHES, Ph. G. Clerk for H. L. Raymond & Co., Lawrence, Kas.
 WATT, ROBERT AENEAS. Prescription clerk for W. G. Lomos, Waxahachie, Tex.
 WALLICK, ELLSWORTH FRANK. Prescription clerk for Shockey & Pearson, Pueblo, Colo. Member of Colorado Scientific Society.
 WILSON, WALTER EVERETT, Ph. G. Prescription clerk for B. H. McEckron & Son, Concordia, Kas. Member of the Kansas Pharmaceutical Association.
 YOUNGBERG, ALFRED, Ph. G. Pharmacist, Ottawa, Kas.

Class of 1894.

- BARBER, PERRY BIGELOW, Ph. G. Pharmacist, Lawrence, Kas.
 CLARK, WILLIAM MARSHEL, Ph. G.
 ERNST, HENRY, Ph. G.
 FOX, HARRY I., Ph. G.* Hatter, Atchison, Kas.
 HALLER, GEORGE ERVIN, Ph. G. Pharmacist, Burlingame, Kas.
 JENKINS, HERBERT EDWARD, Ph. G. Pharmacist, Seneca, Kas.

JOSLIN, CHARLES EDWARD, Ph. G.
KELLY, THOMAS HENRY, Ph. G. Pharmacist, Olathe, Kas.
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